DSC-P73

SERVICE MANUAL

Ver 1.0 2004.04
Revision History

How to use
Acrobat Reader

Photo: Silver

US Model
Canadian Model
AEP Model
UK Model
E Model
Hong Kong Model
Australian Model
Chinese Model
Korea Model
Argentine Model
Brazilian Model
Tourist Model
Japanese Model

Link

SPECIFICATIONS	BLOCK DIAGRAMS	PRINTED WIRING BOARDS
SERVICE NOTE	FRAME SCHEMATIC DIAGRAM	REPAIR PARTS LIST
DISASSEMBLY	SCHEMATIC DIAGRAMS	

- For ADJUSTMENTS (SECTION 6), refer to SERVICE MANUAL, ADJ (987673351.pdf).

- Reference No. search on printed wiring boards is available.
- Note in Lens Frame Installation
- HELP: Sheet attachment positions and procedures of processing the flexible boards/harnesses are shown.

On the CH-146 and SY-100 boards

This service manual procides the information that is premised the circuit board replacement service and not intended repair inside the CH-146 and SY-100 boards.
Therefore, schematic diagram, printed wiring board and electrical parts list of the CH-146 and SY-100 boards are not shown.
The following pages are not shown.

Schematic diagram ..... Pages 4-9 to 4-26
Printed wiring board ..... Pages 4-39 to 4-42
Mounted parts location..... Pages 4-50
Electrical parts list ..... Pages 5-7 and 5-10 to 5-13

The above-described information is shown in service manual Level 3.

DIGITAL STILL CAMERA

SONY®

Self Diagnosis Supported model

Cyber-shot

MEMORY STICK ™

SPECIFICATIONS

■ Camera

[System]

Image device 6.85 mm (1/2.7 type) color CCD
Primary color filter

Total pixels number of camera
Approx. 4 231 000 pixels

Effective pixels number of camera
Approx. 4 065 000 pixels

Lens 3× zoom lens
f=6 to 18 mm
(35 mm camera conversion: 39 to 117 mm)
F2.8-5.2

Exposure control
Automatic, Manual exposure, Twilight, Twilight portrait, Candle, Landscape, Beach, Soft snap

White balance
Automatic, Daylight, Cloudy, Fluorescent, Incandescent

File format (DCF compliant)
Still images: Exif Ver. 2.2, JPEG compliant, DPOF compatible
Movies: MPEG1 compliant (Monaural)

Recording medium
"Memory Stick"

Flash Recommended distance (when ISO sensitivity is set to Auto)
0.2 to 3.5 m (7 7/8 inches to 11 feet 5 7/8 inches) (W)
0.5 to 3.5 m (19 3/4 inches to 11 feet 5 7/8 inches) (T)

[Output connectors]

A/V OUT (MONO) jack (Monaural)
Minijack
Video: 1 Vp-p, 75 Ω, unbalanced, sync negative
Audio: 327 mV (at a 47 kΩ load)
Output impedance 2.2 kΩ

USB jack mini-B

USB communication
Hi-Speed USB (USB 2.0 compliant)

[LCD screen]

LCD panel used
3.8 cm (1.5 type) TFT drive

Total number of dots
67 200 (280×240) dots

[Power, general]

Power AA nickel hydride batteries (2)
2.4 V
AC-LS5 AC Adaptor (not supplied), 4.2 V

Power consumption (during shooting with LCD screen on)
1.1 W

Operating temperature range
0° to +40°C (32° to +104°F)

Storage temperature range
–20° to +60°C (–4° to +140°F)

Dimensions 117.2 × 53.7 × 35.8 mm (4 5/8 × 2 1/8 × 1 7/16 inches) (W/H/D, protruding portions not included)

Mass Approx. 236 g (0.5 lb 8.3 oz) (two batteries, "Memory Stick," wrist strap, and so on included)

Microphone Electret condenser microphone

Speaker Dynamic speaker

Exif Print Compatible

PRINT Image Matching II Compatible

PictBridge Compatible

■ BC-CS2A/CS2B Ni-MH battery charger

Power requirements
AC 100 to 240V 50/60Hz
3 W

Output voltage
AA : DC 1.4 V 400 mA × 2
AAA : DC 1.4 V 160 mA × 2

Operating temperature range
0° to +40°C (32° to +104°F)

Storage temperature range
–20° to +60°C (–4° to +140°F)

Dimensions 71 × 30 × 91 mm (2 7/8 × 1 3/16 × 3 5/8 inches) (W/H/D)

Mass Approx. 90 g (3 oz)

■ AC-LS5 AC Adaptor (not supplied)

Input rating AC 100 to 240 V, 50/60 Hz
11 W, 0.16 to 0.09 A

Output rating DC 4.2 V, 1.5 A

Operating temperature range
0° to +40°C (32° to +104°F)

Storage temperature range
–20° to +60°C (–4° to +140°F)

Maximum dimensions
Approx. 48 × 29 × 81 mm (1 15/16 × 1 3/16 × 3 1/4 inches) (W/H/D)

Mass Approx. 130 g (5 oz)

Accessories

- HR6 (size AA) Ni-MH batteries (2)
- Battery case (1)
- BC-CS2A/CS2B Ni-MH Battery charger (1)
- Power cord (mains lead) (1)
- USB cable (1)
- A/V connecting cable (1)
- Wrist strap (1)
- "Memory Stick" (16MB) (1)
- CD-ROM (USB driver: SPVD-012) (1)
- Operating Instructions (1)

See page 5-14.

Design and specifications are subject to change without notice.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈSES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPÉMENTS PUBLIÉS PAR SONY.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer.

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, through functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the B+ voltage to see it is at the values specified.
6. Flexible Circuit Board Repairing
   - Keep the temperature of the soldering iron around 270˚C during repairing.
   - Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
   - Be careful not to apply force on the conductor when soldering or unsoldering.

Unleaded solder

Boards requiring use of unleaded solder are printed with the lead-free mark (LF) indicating the solder contains no lead.
(Caution: Some printed circuit boards may not come printed with the lead free mark due to their particular size.)

: LEAD FREE MARK

Unleaded solder has the following characteristics.

- Unleaded solder melts at a temperature about 40°C higher than ordinary solder.
  Ordinary soldering irons can be used but the iron tip has to be applied to the solder joint for a slightly longer time.
  Soldering irons using a temperature regulator should be set to about 350°C.
  Caution: The printed pattern (copper foil) may peel away if the heated tip is applied for too long, so be careful!
- Strong viscosity
  Unleaded solder is more viscous (sticky, less prone to flow) than ordinary solder so use caution not to let solder bridges occur such as on IC pins, etc.
- Usable with ordinary solder
  It is best to use only unleaded solder but unleaded solder may also be added to ordinary solder.

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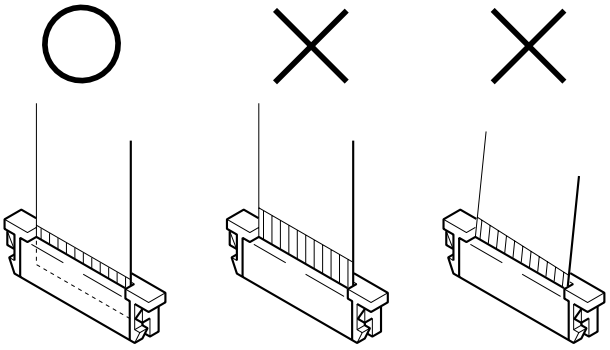
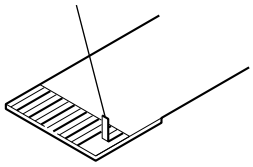
SECTION 1
SERVICE NOTE

1-1. NOTE FOR REPAIR

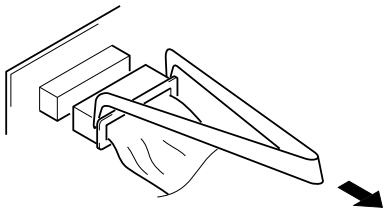
Make sure that the flat cable and flexible board are not cracked of bent at the terminal.
Do not insert the cable insufficiently nor crookedly.



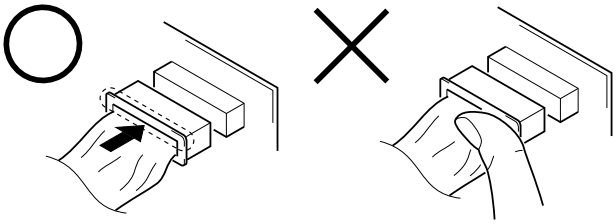
Cut and remove the part of gilt which comes off at the point. (Be careful or some pieces of gilt may be left inside)



When remove a connector, don't pull at wire of connector.
It is possible that a wire is snapped.



When installing a connector, don't press down at wire of connector.
It is possible that a wire is snapped.

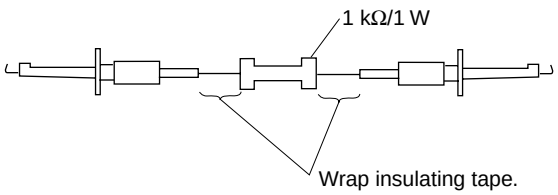


1-2. DISCHARGING OF THE ST-097 BOARD'S CHARGING CAPACITOR (C852)

The charging capacitor (C852) of the ST-097 board is charged up to the maximum 300 V potential.
There is a danger of electric shock by this high voltage when the capacitor is handled by hand. The electric shock is caused by the charged voltage which is kept without discharging when the main power of the unit is simply turned off. Therefore, the remaining voltage must be discharged as described below.

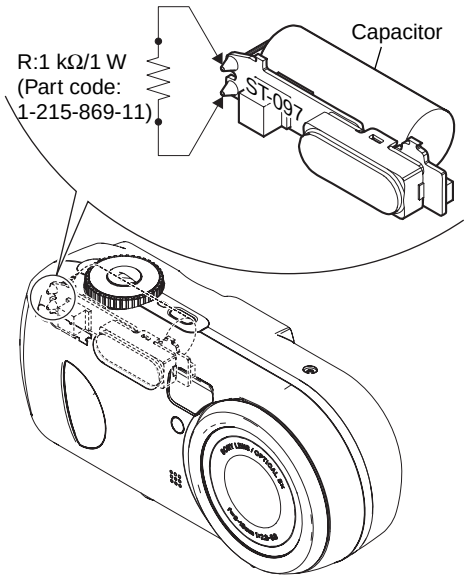
Preparing the Short Jig

To preparing the short jig, a small clip is attached to each end of a resistor of 1 kΩ /1 W (1-215-869-11).
Wrap insulating tape fully around the leads of the resistor to prevent electrical shock.



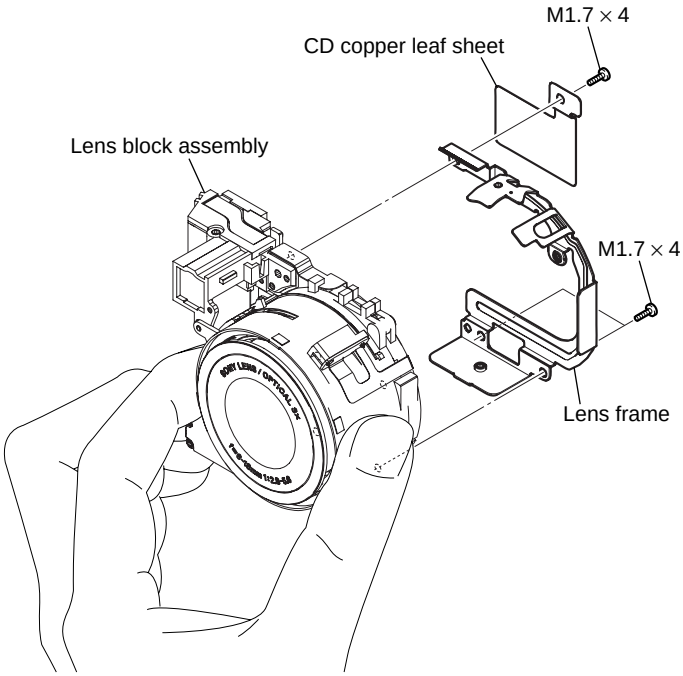
Discharging the Capacitor

Short-circuit between the positive and the negative terminals of charged capacitor with the short jig about 10 seconds.



1-3. NOTE IN LENS FRAME INSTALLATION

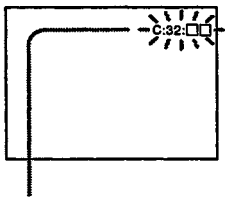
When tightening a screw, have both sides of the lens block assembly so as not for the load to depend.



1-4. DESCRIPTION ON SELF-DIAGNOSIS DISPLAY

Self-diagnosis display

The camera has a self-diagnosis display. This function displays the camera condition with five-digits (a combination of a letter and figures) on the LCD screen. If this occurs check the following code chart. The five-digits display informs you of the camera's current condition. The last two digits (indicated by ☐☐) will differ depending on the state of the camera.



Self-diagnosis display

- C: ☐☐: ☐☐
  You can reverse the camera malfunction yourself. (However, contact your Sony dealer or local authorized Sony service facility when you cannot recover from the camera malfunction.)
- E: ☐☐: ☐☐
  Contact your Sony dealer or local authorized Sony service facility.

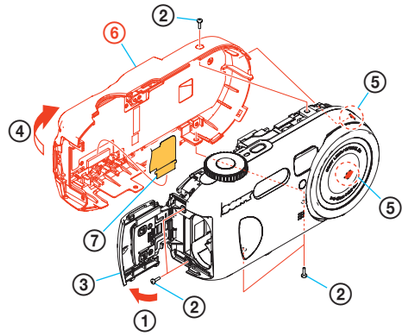
Display Code	Countermeasure	Cause	Caution Display During Error
C:32:☐☐	Turn the power off and on again.	Trouble with hardware.	SYSTEM ERROR
C:13:☐☐	Format the "Memory stick".	Unformatted memory stick is inserted.	FORMAT ERROR
	Insert a new "Memory Stick".	Memory stick is broken.	MEMORY STICK ERROR
E:61:☐☐	Checking of lens drive circuit.	When failed in the focus and zoom initialization.	—
E:91:☐☐	Checking of flash unit or replacement of flash unit.	Abnormality when flash is being charged.	
E:92:☐☐	Insert batteries correctly.	Batteries are not inserted correctly.	
	Turn the power off and on again.	Batteries were installed or removed when using the AC adaptor.	

HELP

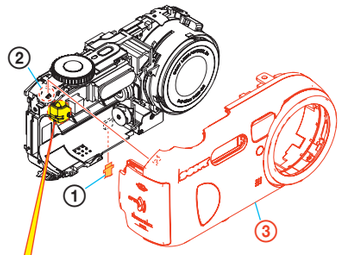
SECTION 2
DISASSEMBLY

2-1. FLOW CHART

The following flow chart shows the disassembly procedure.



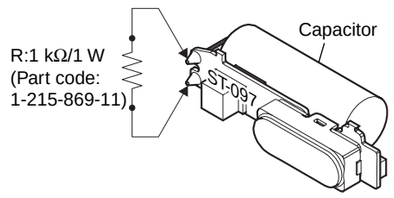
① Open the BT lid.
② Screw (M1.7) *x5*
③ Close the BT lid.
④ Open rear cabinet in the direction of arrow.
⑤ Claw *x2*
⑥ Rear cabinet
Note: Flexible board is connected.
⑦ FP-859: CN201

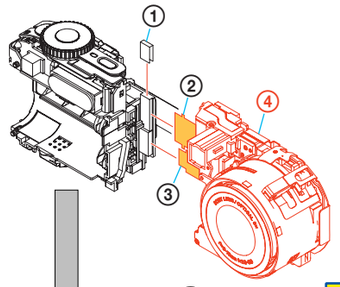


① Mic unit flexible: CN707
② Claw
③ Front cabinet

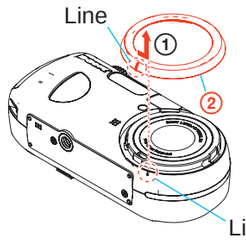
Note: High-voltage cautions

Discharging the Capacitor
Short-circuit between the two points with the short jig about 10 seconds.

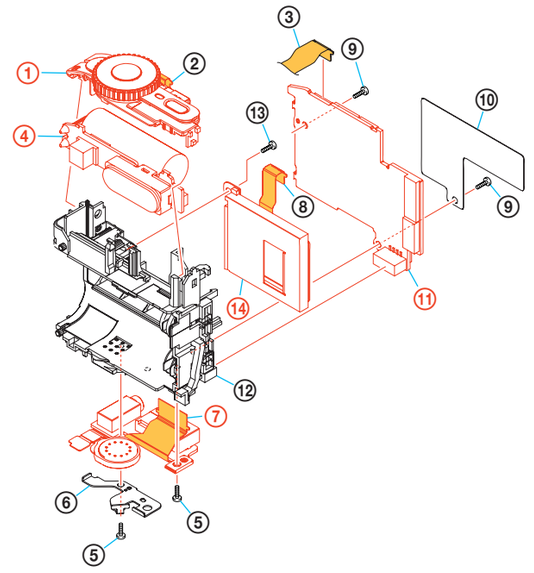




① Tape (A) HELP
② FP-854: CN702
③ Lens block flexible: CN601
④ Lens block



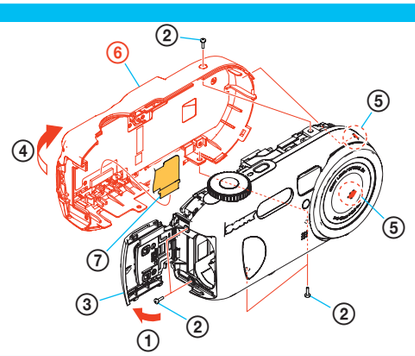
① Turn Lens ring to the position which the line of Lens ring and the line of Front cabinet suit.
② Lens ring

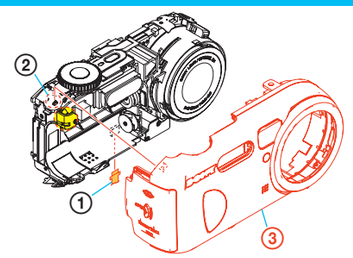


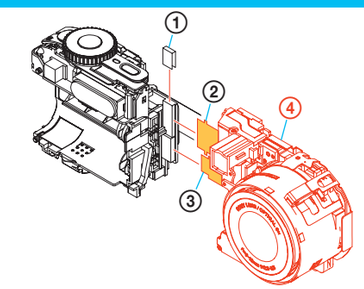
① Control switch block
② Control switch block flexible: CN706
③ FP-852: CN703
④ ST-097
⑤ Tapping screw *x2*
⑥ SP retainer plate
⑦ FP-860: CN751
⑧ FP-861: CN705
⑨ Tapping screw *x2*
⑩ SY copper leaf sheet
⑪ SY-100
⑫ BT harness: CN001
⑬ Tapping screw *x1*
⑭ MS

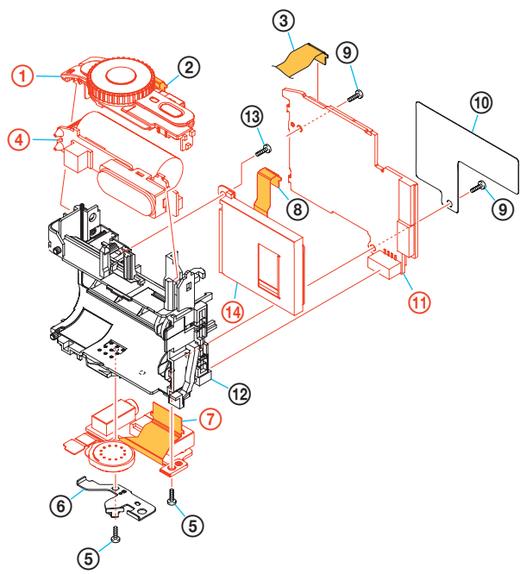
Refer to "5-1-3. BT HOLDER BLOCK SECTION" (Page 5-4) for details.

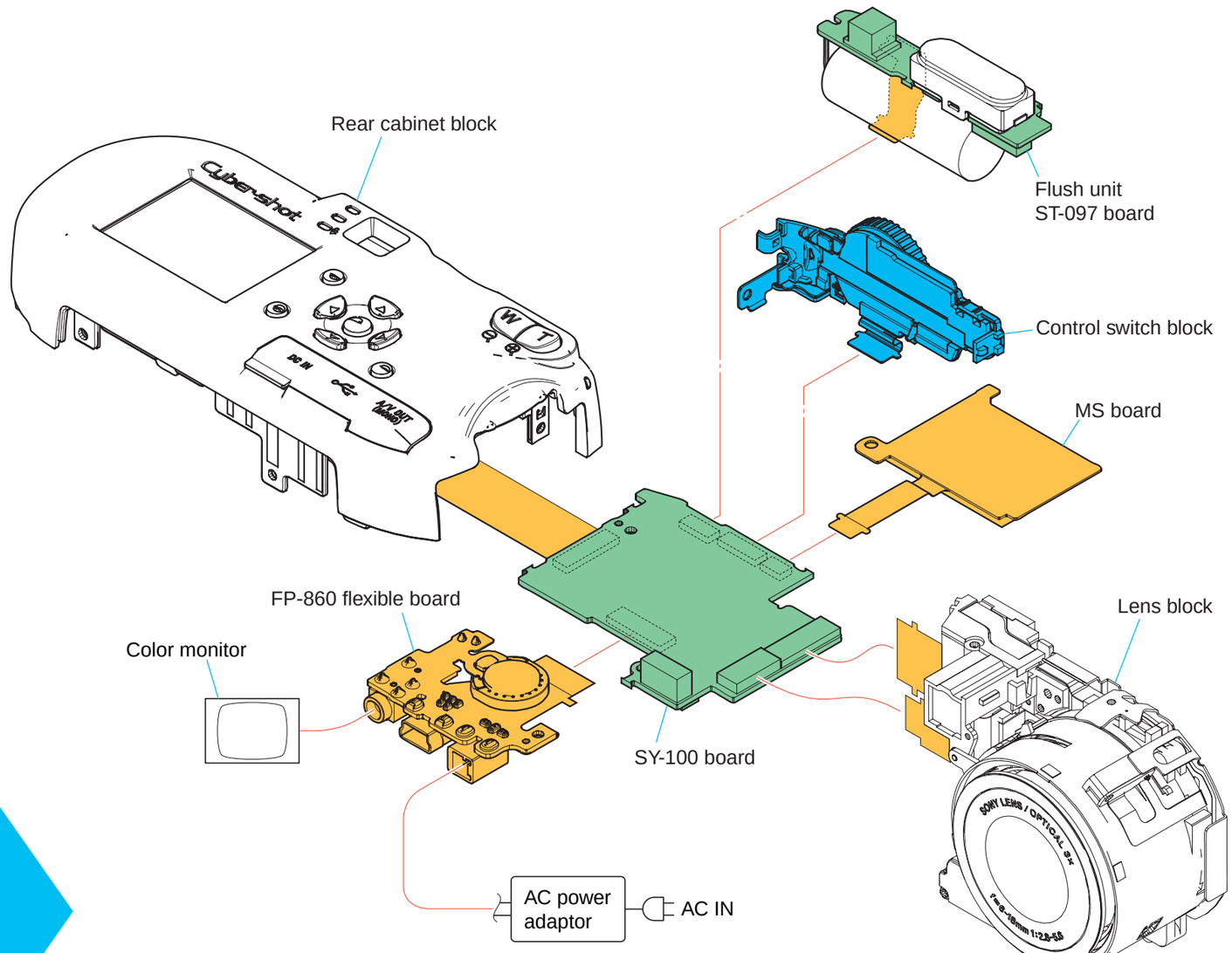
2-2. SY-100 BOARD SERVICE POSITION



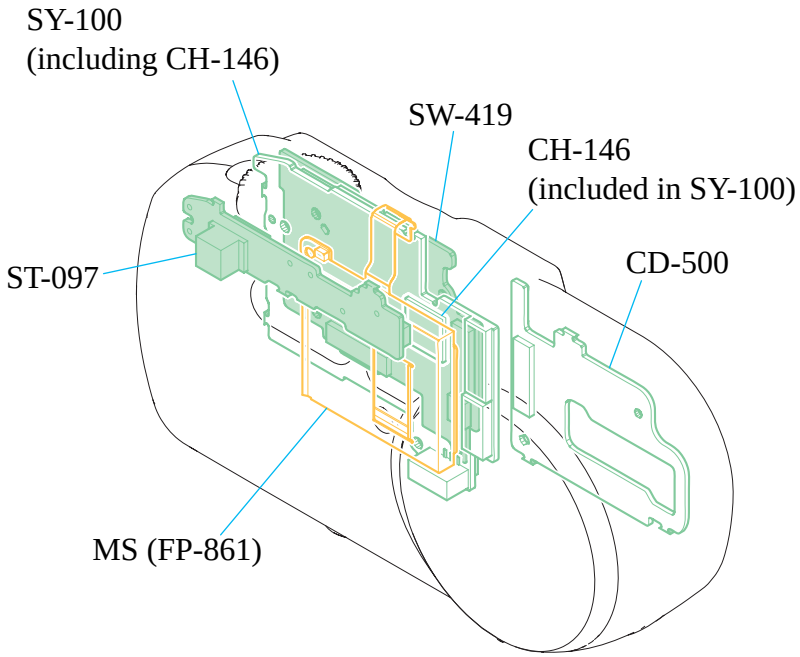






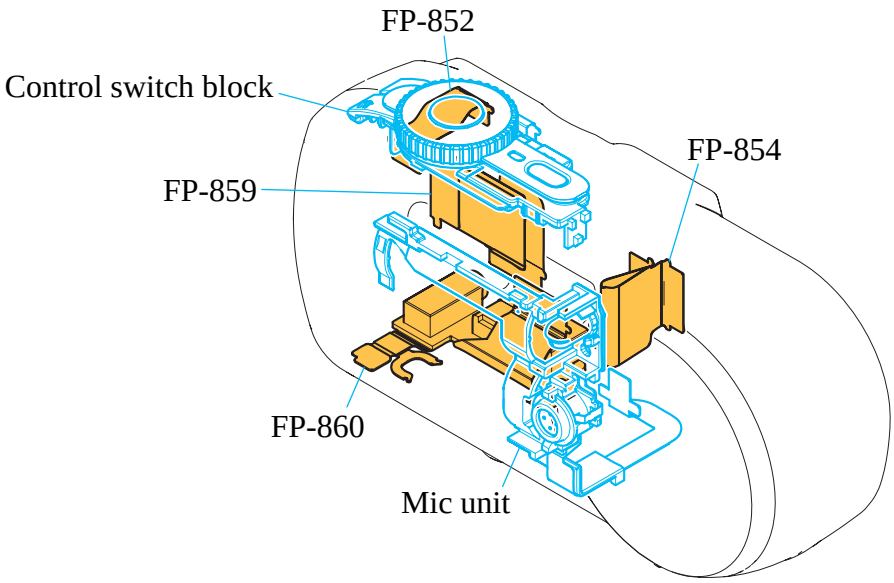


2-3. CIRCUIT BOARDS LOCATION



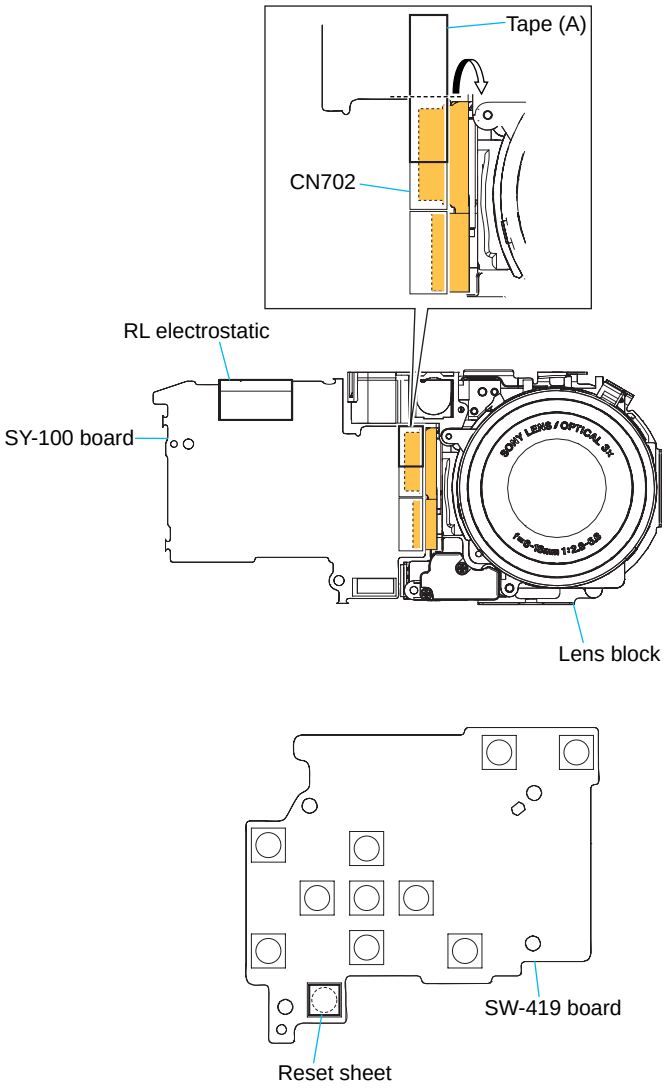
Board Name	Function
CD-500	CCD IMAGER
CH-146 (included in SY-100)	CCD SIGNAL PROCESS
MS (FP-861)	MEMORY STICK CONNECTOR
ST-097	FLASH DRIVE
SW-419	CONTROL SWITCH, LCD DRIVE
SY-100 (Including CH-146)	CAMERA MODULE, CAMERA DSP, LENS DRIVE, SH DSP, FRONT CONTROL, AUDIO, DC/DC CONVERTER

2-4. FLEXIBLE BOARDS LOCATION



HELP

Sheet attachment positions and procedures of processing the flexible boards/harnesses are shown.



3. BLOCK DIAGRAMS

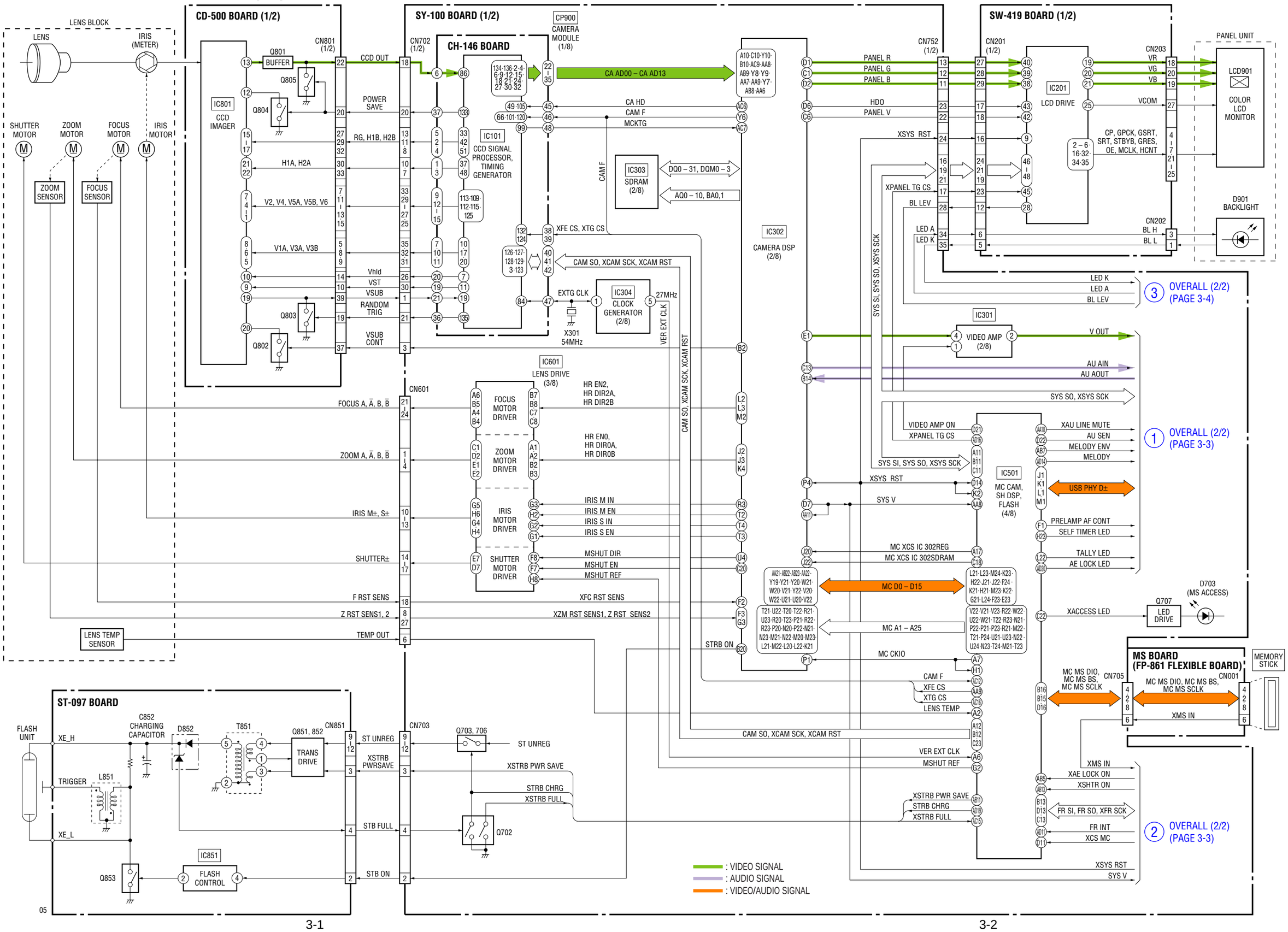
Link

- OVERALL BLOCK DIAGRAM (1/2)
- POWER BLOCK DIAGRAM (1/2)
- OVERALL BLOCK DIAGRAM (2/2)
- POWER BLOCK DIAGRAM (2/2)

SECTION 3
BLOCK DIAGRAMS

3-1. OVERALL BLOCK DIAGRAM (1/2)

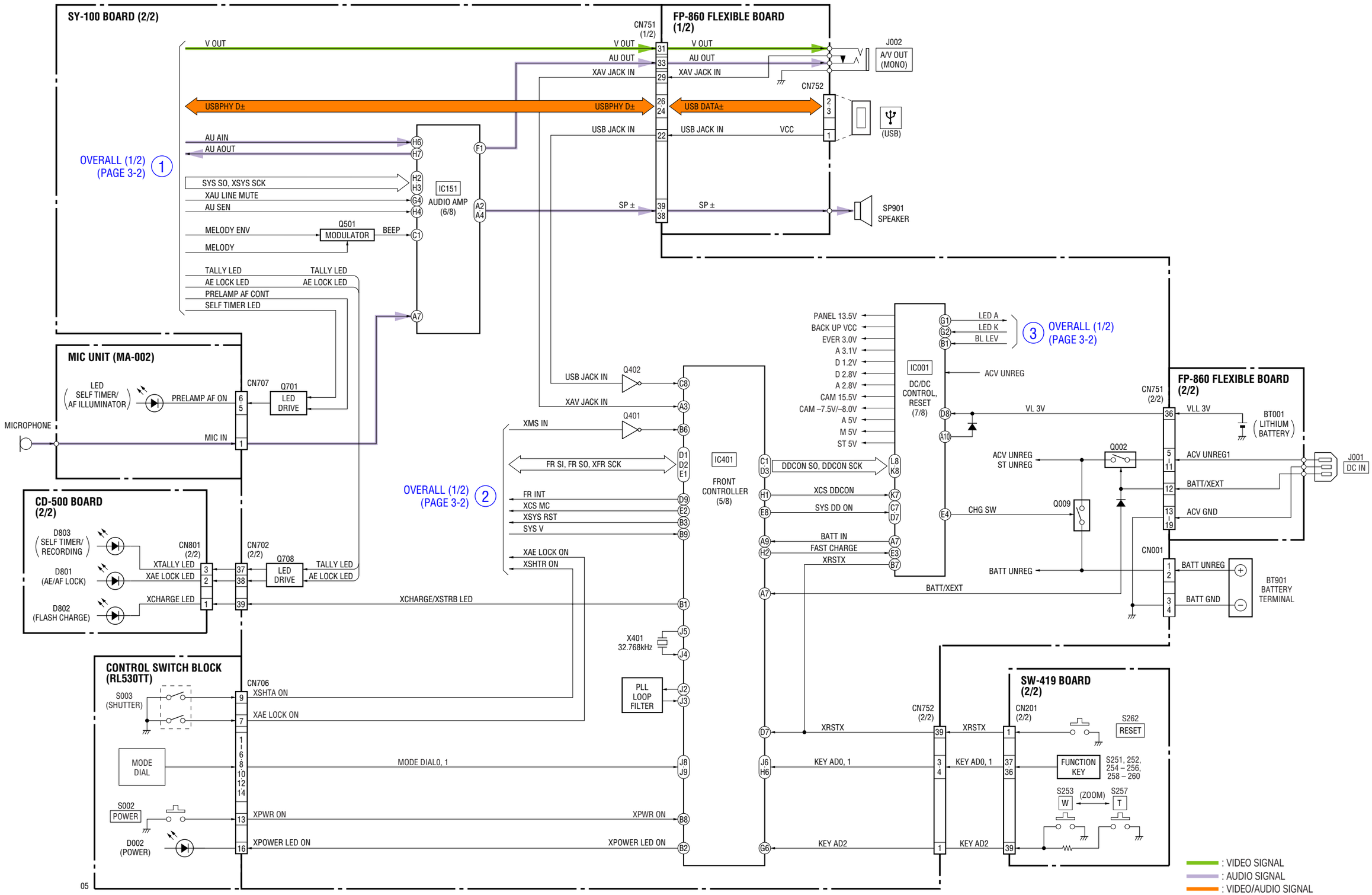
( ) : Number in parenthesis ( ) indicates the division number of schematic diagram where the component is located.



3. BLOCK DIAGRAMS

3-2. OVERALL BLOCK DIAGRAM (2/2)

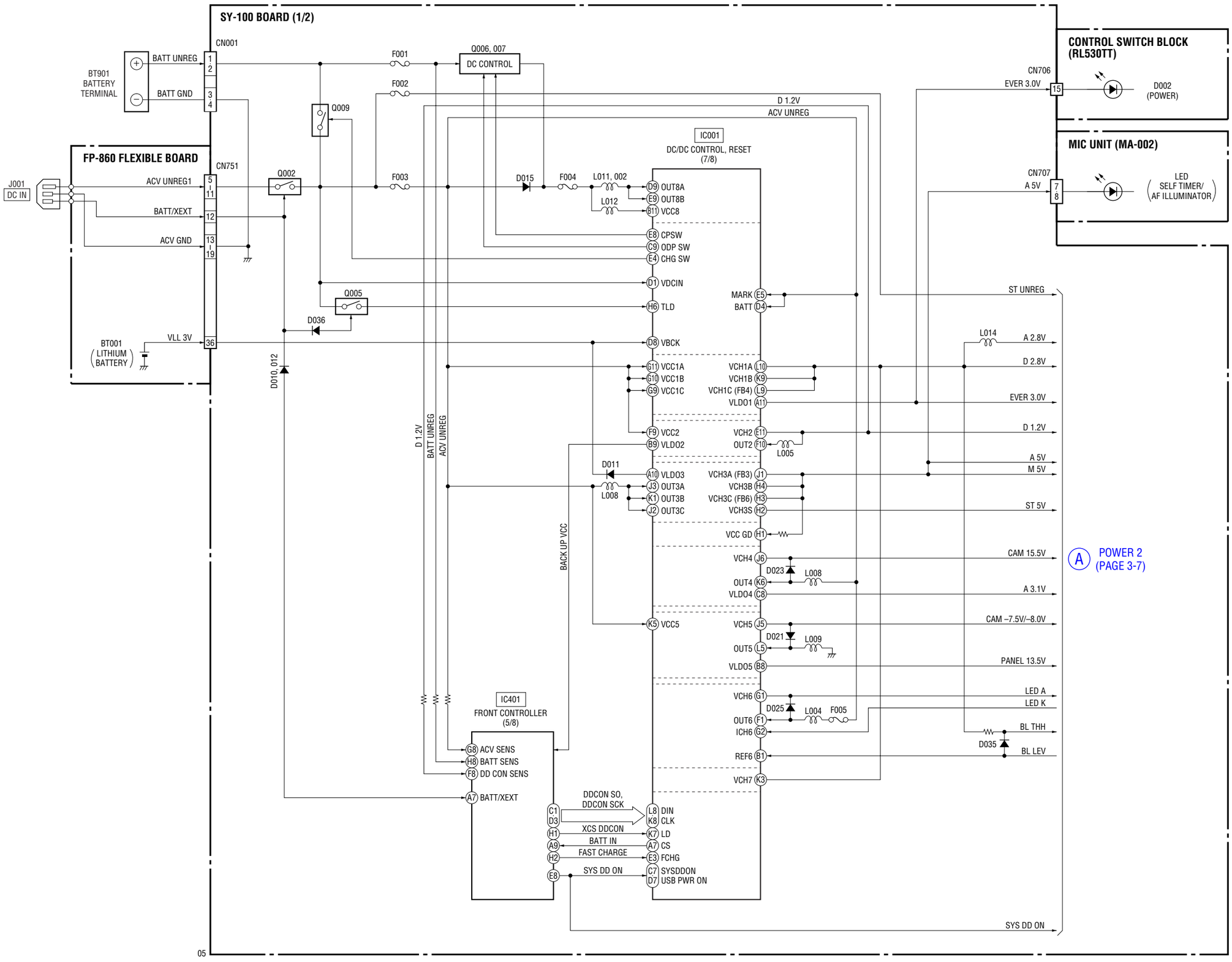
( ) : Number in parenthesis ( ) indicates the division number of schematic diagram where the component is located.



3. BLOCK DIAGRAMS

3-3. POWER BLOCK DIAGRAM (1/2)

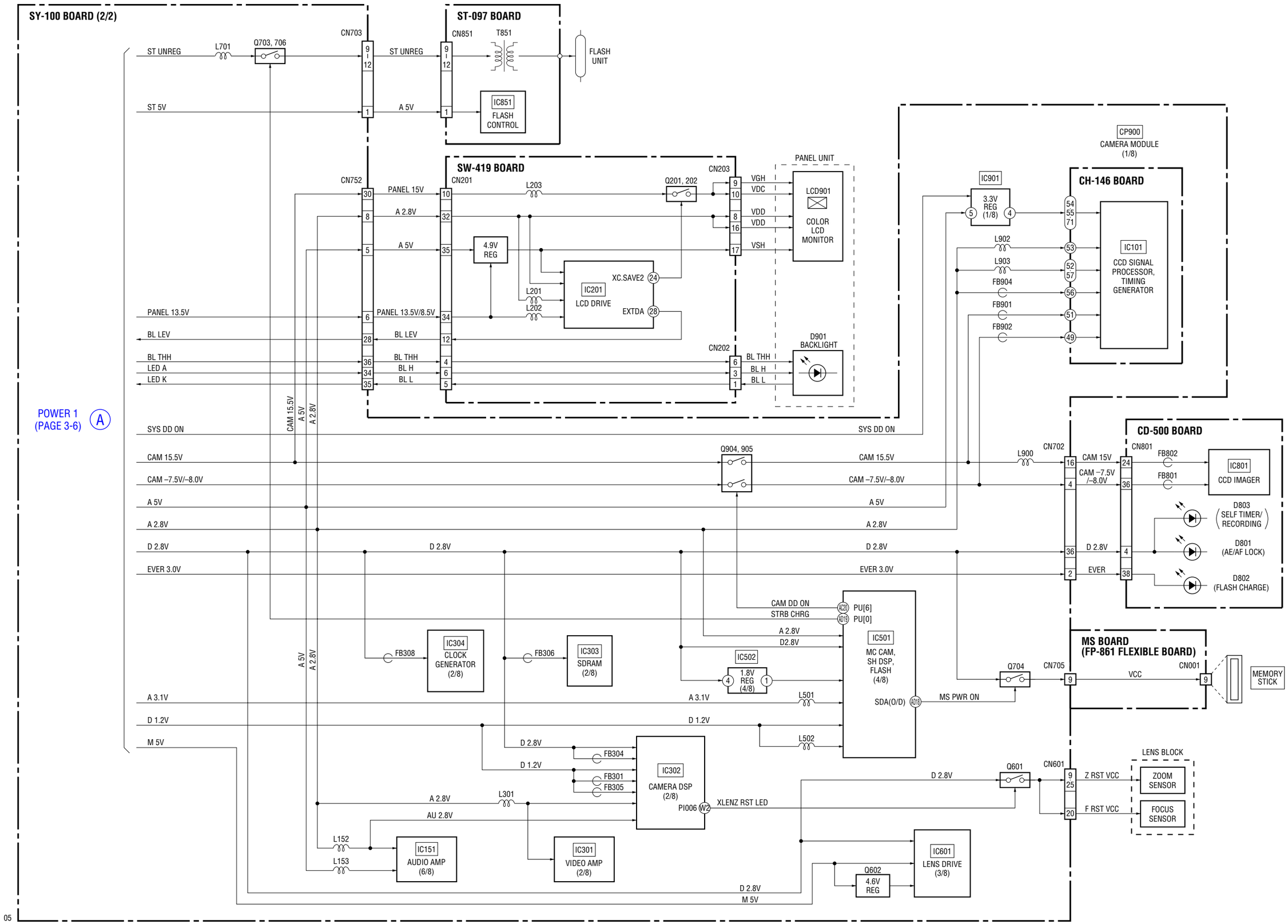
( ) : Number in parenthesis ( ) indicates the division number of schematic diagram where the component is located.



3. BLOCK DIAGRAMS

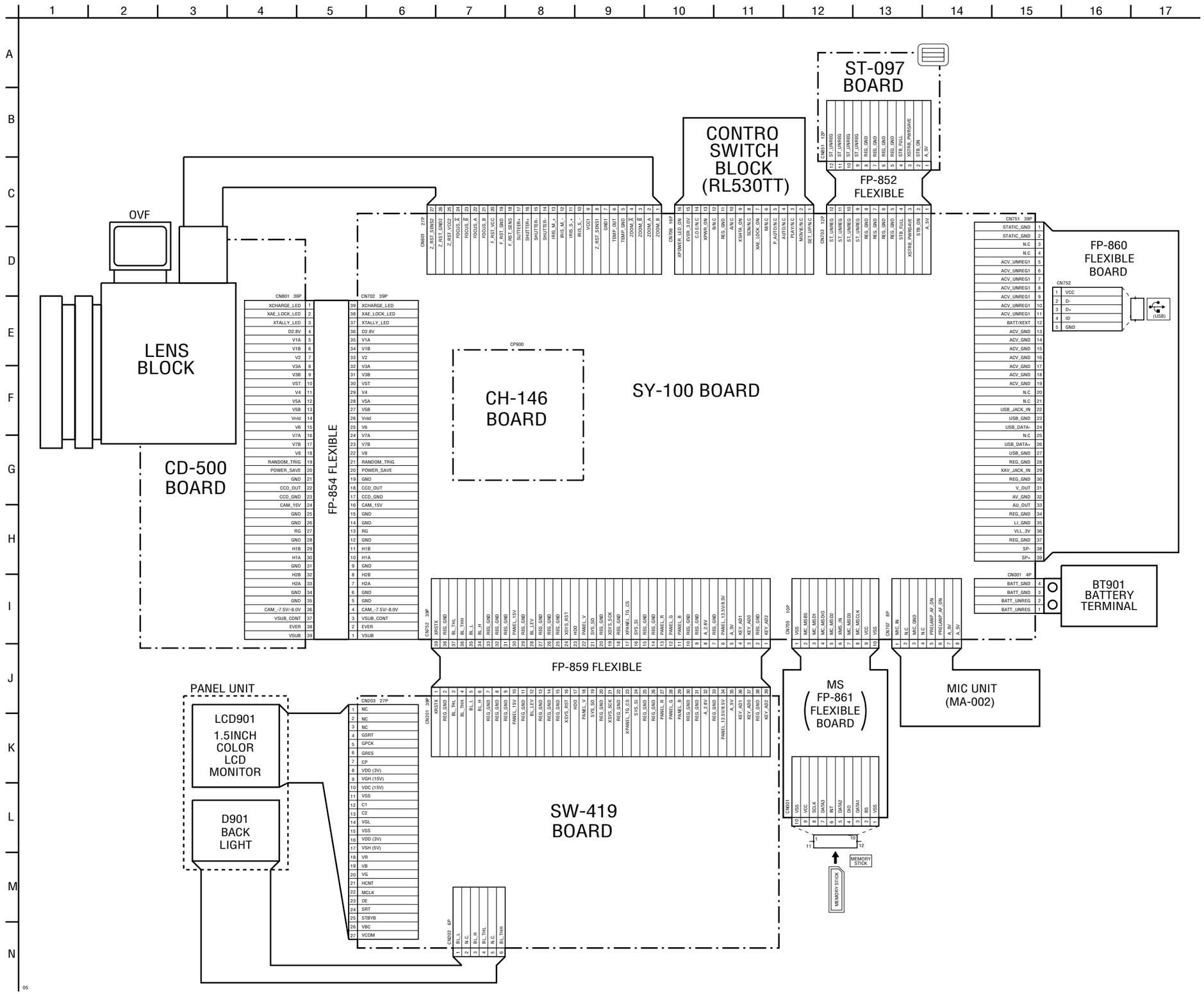
3-4. POWER BLOCK DIAGRAM (2/2)

( ) : Number in parenthesis ( ) indicates the division number of schematic diagram where the component is located.



SECTION 4
PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

4-1. FRAME SCHEMATIC DIAGRAM



4-2. SCHEMATIC DIAGRAMS

Link

- CD-500 BOARD (CCD IMAGER)
- FP-860 FLEXIBLE BOARD (JACK)
- SW-419 BOARD (CONTROL SWITCH, LCD DRIVE)
- MIC UNIT (MA-002)
- ST-097 BOARD (FLASH DRIVE)
- CONTROL SWITCH BLOCK (RL530TT)
- MS BOARD (FP-861 FLEXIBLE BOARD) (MEMORY STICK CONNECTOR)

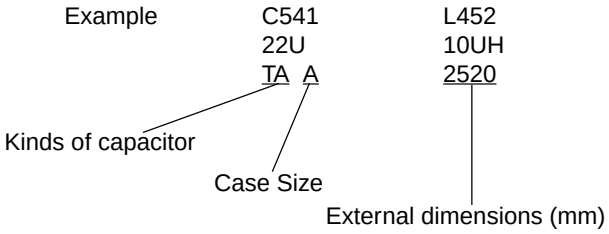
- COMMON NOTE FOR SCHEMATIC DIAGRAMS

4-2. SCHEMATIC DIAGRAMS

THIS NOTE IS COMMON FOR SCHEMATIC DIAGRAMS
(In addition to this, the necessary note is printed in each block)

(For schematic diagrams)

- All capacitors are in µF unless otherwise noted. pF : µµF. 50 V or less are not indicated except for electrolytics and tantalums.
- Chip resistors are 1/10 W unless otherwise noted. kΩ=1000 Ω, MΩ=1000 kΩ.
- Caution when replacing chip parts. New parts must be attached after removal of chip. Be careful not to heat the minus side of tantalum capacitor, Because it is damaged by the heat.
- Some chip part will be indicated as follows.

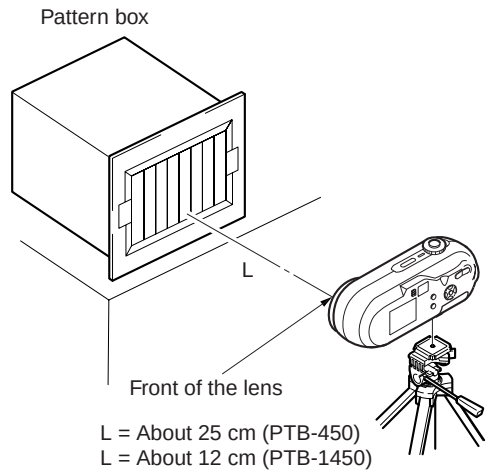


- Constants of resistors, capacitors, ICs and etc with XX indicate that they are not used. In such cases, the unused circuits may be indicated.
- Parts with ★ differ according to the model/destination. Refer to the mount table for each function.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- Signal name
  XEDIT → $\overline{\text{EDIT}}$ PB/XREC → PB/$\overline{\text{REC}}$
- : non flammable resistor
- : fusible resistor
- : panel designation
- : B+ Line
- : B– Line
- : IN/OUT direction of (+,–) B LINE.
- : adjustment for repair.
- : VIDEO SIGNAL (ANALOG)
- : AUDIO SIGNAL (ANALOG)
- : VIDEO/AUDIO SIGNAL
- : VIDEO/AUDIO/SERVO SIGNAL
- : SERVO SIGNAL
- Circled numbers refer to waveforms.

(Measuring conditions voltage and waveform)

- Voltages and waveforms are measured between the measurement points and ground when camera shoots color bar chart of pattern box. They are reference values and reference waveforms.
  (VOM of DC 10 MΩ input impedance is used)
- Voltage values change depending upon input impedance of VOM used.)

1. Connection



2. Adjust the distance so that the output waveform of Fig. a and the Fig. b can be obtain.

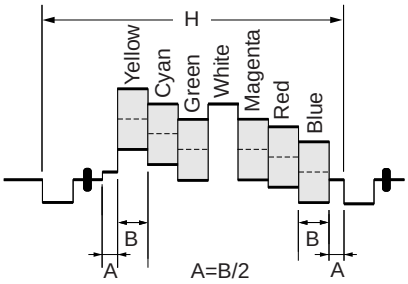


Fig. a (Video output terminal output waveform)

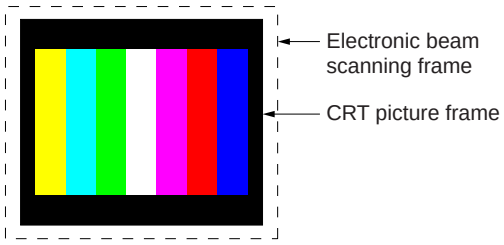


Fig.b (Picture on monitor TV)

When indicating parts by reference number, please include the board name.

Note : The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Note : Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifie.

For Schematic Diagram

• Refer to page 4-37 for printed wiring board.

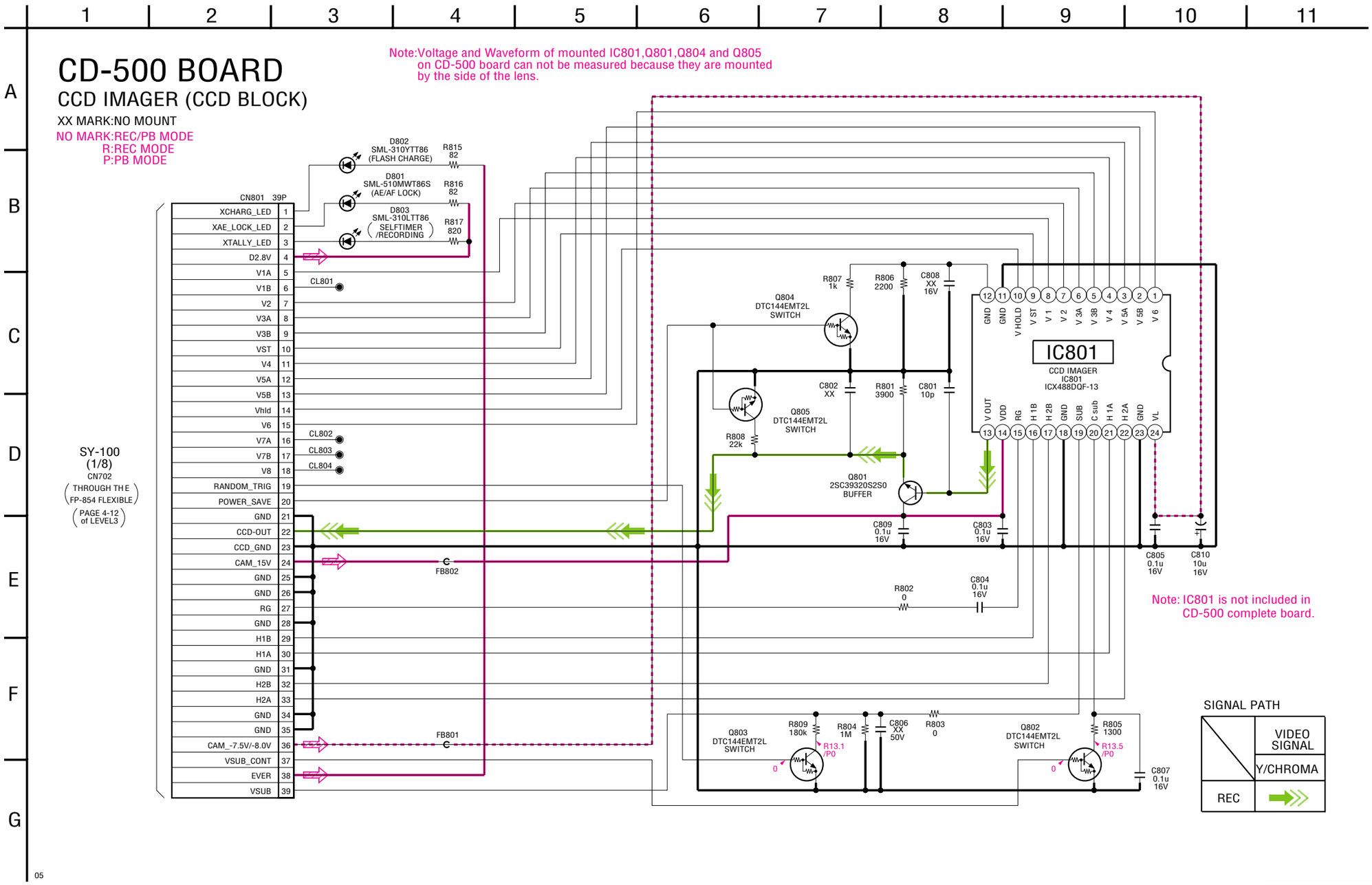
CD-500 BOARD

CCD IMAGER (CCD BLOCK)

XX MARK:NO MOUNT

NO MARK:REC/PB MODE
R:REC MODE
P:PB MODE

Note:Voltage and Waveform of mounted IC801,Q801,Q804 and Q805 on CD-500 board can not be measured because they are mounted by the side of the lens.



Note: IC801 is not included in CD-500 complete board.

SIGNAL PATH

	VIDEO SIGNAL
	Y/CHROMA
REC	

Precautions for Replacement of CCD Imager

- The CD-500 board mounted as a repair part is not equipped with a CCD imager.
  When replacing this board, remove the CCD imager from the old one and mount it onto the new one.
- If the CCD imager has been replaced, carry out all the adjustments for the camera section.
- As the CCD imager may be damaged by static electricity from its structure, handle it carefully like for the MOS IC.
  In addition, ensure that the receiver is not covered with dusts nor exposed to strong light.

Schematic diagrams of the CH-146 and SY-100 boards are not shown.
Pages from 4-9 to 4-26 are not shown.

For Schematic Diagram

• Refer to page 4-43 for printed wiring board.

SW-419 BOARD

CONTROL SWITCH,LCD DRIVE (PB BLOCK)

XX MARK:NO MOUNT

NO MARK:REC/PB MODE

SY-100 (8/8) CN752 (THROUGH THE FP-859 FLEXIBLE) (PAGE 4-26 of LEVEL3)

CN201 39P

KEY_AD2	39	KEY_AD2
REG_GND	38	
KEY_AD0	37	KEY_AD0
KEY_AD1	36	KEY_AD1
A_5V	35	
PANEL_13.5V/8.5V	34	
REG_GND	33	
A_2.8V	32	
REG_GND	31	
REG_GND	30	
PANEL_B	29	
PANEL_G	28	
PANEL_R	27	
REG_GND	26	
REG_GND	25	
SYS_SI	24	SO
XPANEL_TG_CS	23	XCS
REG_GND	22	
XSYS_SCK	21	XSCK
REG_GND	20	
SYS_SO	19	SI
PANEL_V	18	XVD
HDO	17	XHD
XSYS_RST	16	
REG_GND	15	
REG_GND	14	
REG_GND	13	
BL_LEV	12	
REG_GND	11	
PANEL_15V	10	
REG_GND	9	
REG_GND	8	
REG_GND	7	
BL_H	6	BL_H
BL_L	5	BL_L
BL_THH	4	BL_THH
BL_THL	3	BL_THL
REG_GND	2	
XRSTX	1	

L203 10uH, L202 10uH, L201 47uH, L204 47uH

R218 10k, R219 47k, Q203 UMF6NTR 4.9V REG, D203 XX

C214 22u 10V, R220 150k, R221 47k, C201 47u 6.3V

C206 2.2u 25V, C208 4.7u 16V

C211 0.1u 16V

Q202 SSM3J09FU(TE85L) SWITCH

R211 470k, C219 XX

① IC201 ㊳ REC/PB — 320 mVp-p, H

⑨ IC201 ㉕ REC/PB — 5.9 Vp-p, 2H

② IC201 ㊴ REC/PB — 400 mVp-p, H

③ IC201 ㊵ REC/PB — 570 mVp-p, H

④ IC201 ㊷ REC/PB — 2.8 Vp-p, V

⑤ IC201 ㊸ REC/PB — 2.8 Vp-p, H

⑥ IC201 ⑱ REC/PB — 3.0 Vp-p, 2H

⑦ IC201 ⑳ REC/PB — 3.0 Vp-p, 2H

⑧ IC201 ㉑ REC/PB — 3.1 Vp-p, 2H

IC201 — LCD DRIVE IC201 CM7103L43-T4

R215 560 ±0.5%, R216 560 ±0.5%, R217 560 ±0.5%

C202 0.01u, C203 0.01u, C204 0.01u, C205 0.1u 10V

R201 1k, C207 2200p 50V, R213 XX, C210 560p, R203 68k, C209 0.1u, R202 XX, R204 100k ±0.5%, R205 100k ±0.5%

C213 6.8u 16V, R210 150k, R206 10k, D201 XX, C215 1u 10V, Q201 DTC144EMT2L SWITCH

C212 0.1u 10V

R214 470k, C216 0.1u 16V, C217 2.2u 16V, C218 1u 16V, D202 RB481YT2R

JL202, JL201

CN203 27P

27	VCOM
26	VBC
25	STBYB
24	SRT
23	OE
22	MCLK
21	HCNT
20	VG
19	VB
18	VR
17	VSH (5V)
16	VDD (3V)
15	VSS
14	VGL
13	C2
12	C1
11	VSS
10	VDC (15V)
9	VGH (15V)
8	VDD (3V)
7	CP
6	GRES
5	GPCK
4	GSRT
3	NC
2	NC
1	NC

PANEL UNIT — LCD901 1.5INCH COLOR LCD MONITOR

D901 BACK LIGHT

CN202 6P

6	BL_THH
5	N.C.
4	BL_THL
3	BL_H
2	N.C.
1	BL_L

S262 RESET, R260 1k

S254 (SET), S256 (MACRO), S258 MENU, S259 LCD STATUS LCD ON/OFF, S260 IMAGE SIZE/ DELETE

S251 (FLASH), S252 (REVIEW), S255 (SELF TIMER), S253 W — (ZOOM) — T, S257

R256 1500, R259 3300, R257 1500, R258 3300, R253 1200, R254 1200, R255 1200

D251 MAZW068H0LS0, D252 MAZW068H0LS0, D253 MA2S111-(K8).SO, LND251 STATIC_GND

SIGNAL PATH

	VIDEO SIGNAL
	CHROMA
REC	➡
PB	⇨

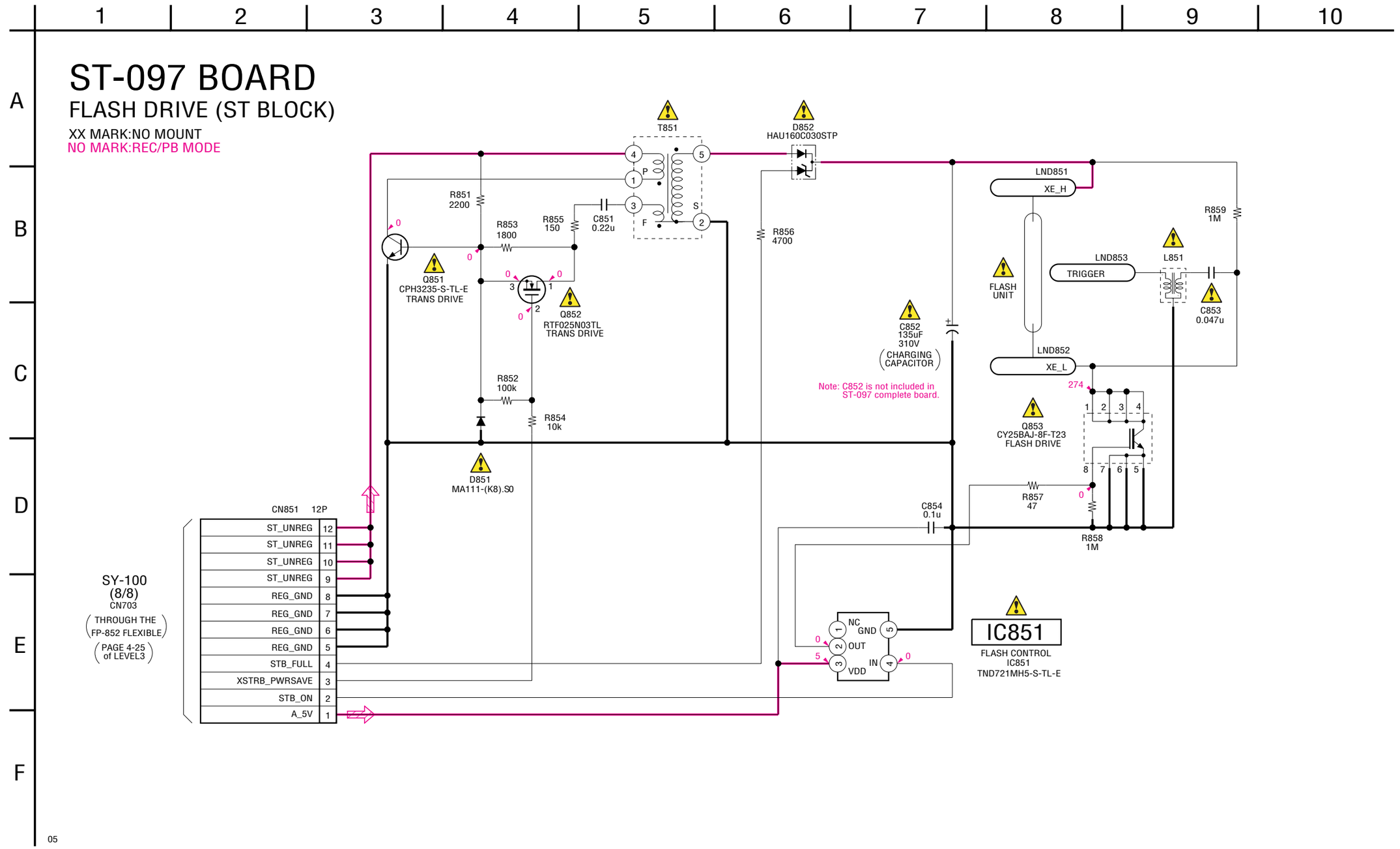
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

For Schematic Diagram
• Refer to page 4-45 for printed wiring board.

ST-097 BOARD

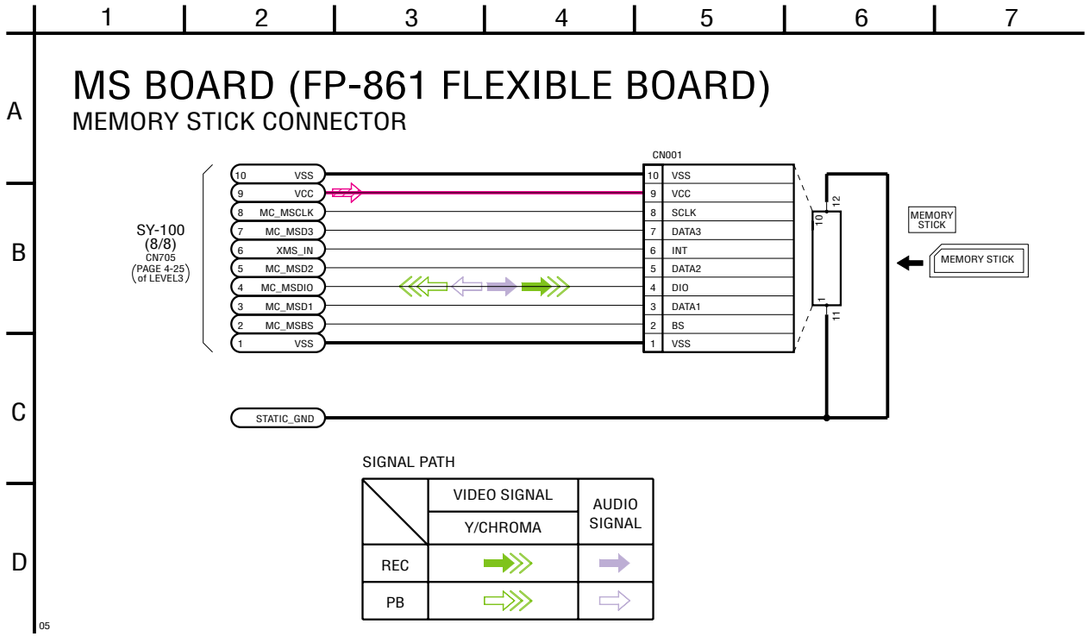
FLASH DRIVE (ST BLOCK)

XX MARK:NO MOUNT
NO MARK:REC/PB MODE

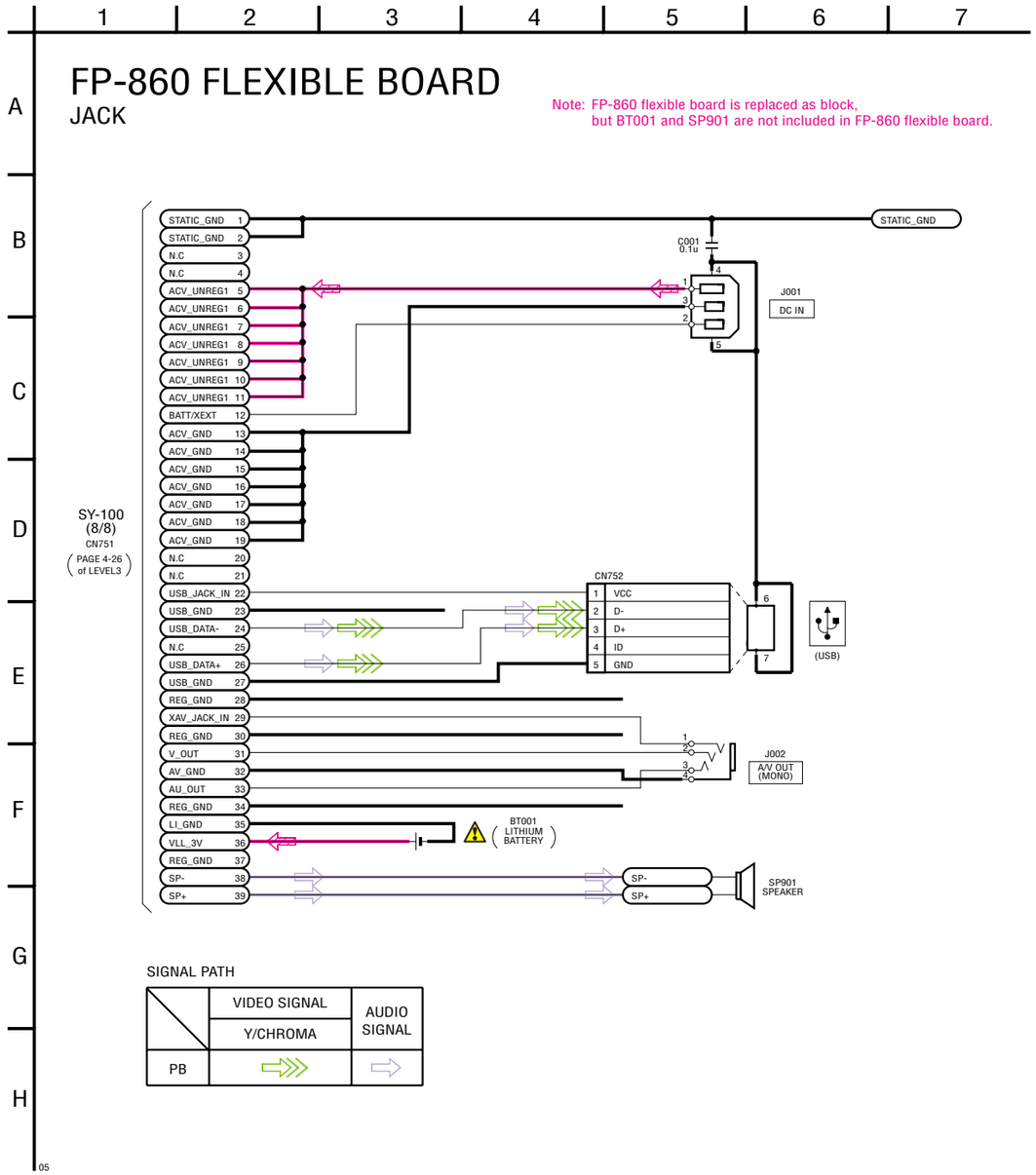


The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

For Schematic Diagram
• Refer to page 4-47 for printed wiring board.



For Schematic Diagram
• Refer to page 4-48 for printed wiring board.

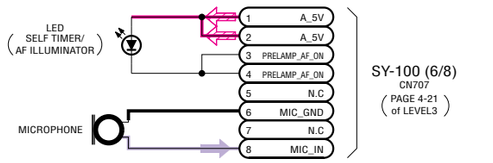


The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

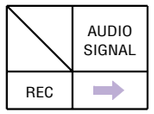
4-2. SCHEMATIC DIAGRAMS

MIC UNIT (MA-002)

(MICROPHONE UNIT (MA-002) is replaced as block, so that PRINTED WIRING BOARD is omitted.)

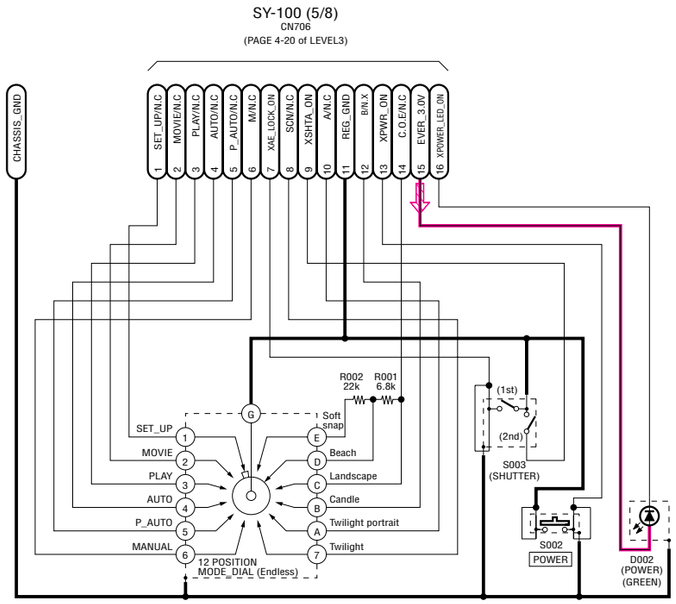


SIGNAL PATH



CONTROL SWITCH BLOCK (RL530TT)

(CONTROL SWITCH BLOCK (RL530TT) is replaced as block, so that PRINTED WIRING BOARD is omitted.)



4-3. PRINTED WIRING BOARDS

Link

- CD-500 BOARD
- MS BOARD (FP-861 FLEXIBLE BOARD)
- SW-419 BOARD
- FP-860 FLEXIBLE BOARD
- ST-097 BOARD
- COMMON NOTE FOR PRINTED WIRING BOARDS
- MOUNTED PARTS LOCATION
- CIRCUIT BOARDS LOCATION
- FLEXIBLE BOARDS LOCATION

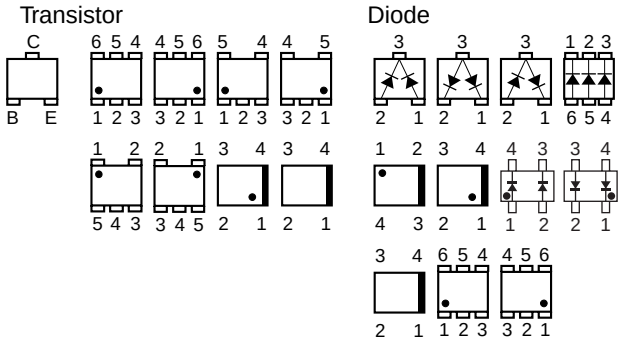
Board Name	Function
CD-500	CCD IMAGER
SW-419	CONTROL SWITCH, LCD DRIVE
ST-097	FLASH DRIVE
MS (FP-861)	MEMORY STICK CONNECTOR

4-3. PRINTED WIRING BOARDS

THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS

- : Uses unleaded solder.
- : Circuit board
  : Flexible board
  Pattern from the side which enables seeing.
  : pattern of the rear side
  (The other layers' patterns are not indicated)
- Through hole is omitted.
- Circled numbers refer to waveforms.
- There are a few cases that the part printed on diagram isn't mounted in this model.
- : panel designation

- Chip parts.



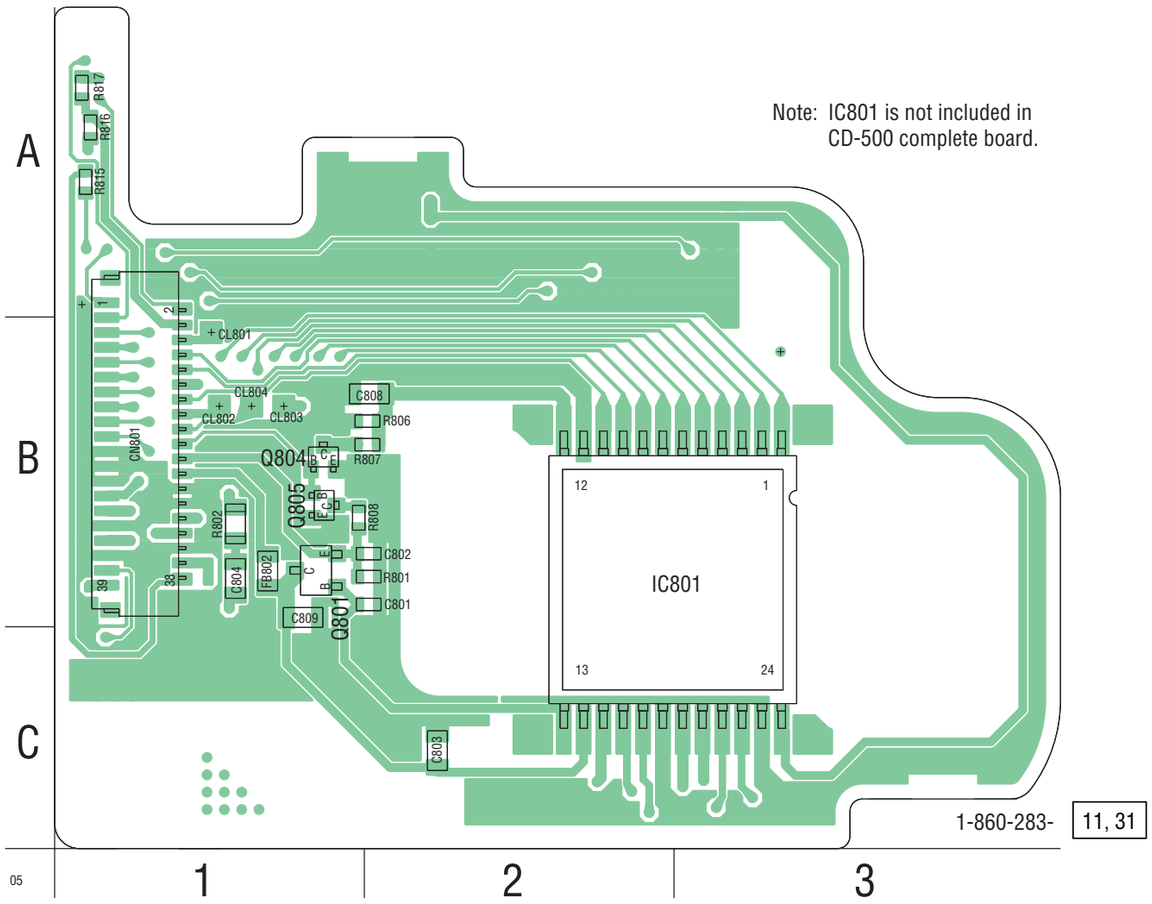
Board Name	Parts Location	Pattern	
		Total Number of Layers	Layers Not Indicated
CD-500	4-49	4 layers	2 and 3 layers
SW-419	4-51	4 layers	2 and 3 layers
ST-097	4-51	4 layers	2 and 3 layers
MS	–	1 layer	–

CD-500

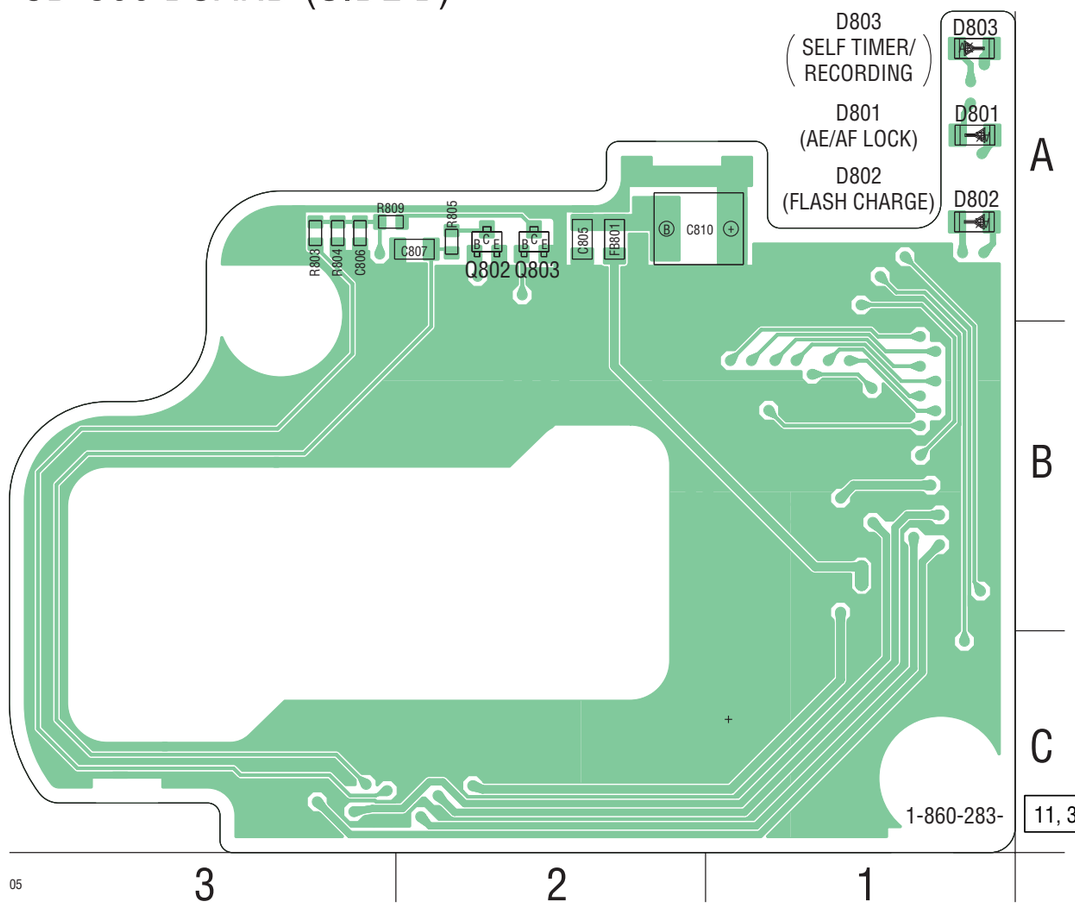
Note for Printed Wiring Board (See page 4-35).

: Uses unleaded solder.

CD-500 BOARD (SIDE A)



CD-500 BOARD (SIDE B)



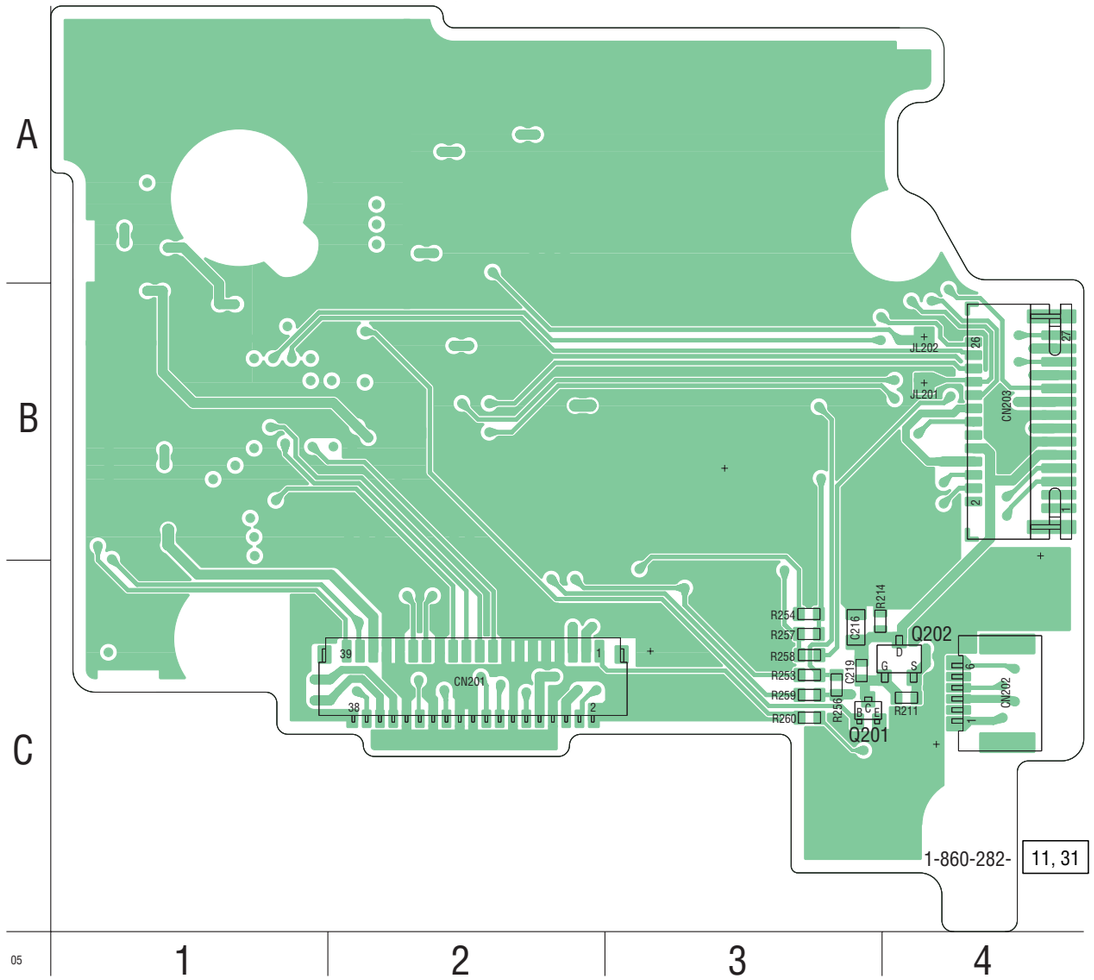
Printed wiring boards of the CH-146 and SY-100 boards are not shown.
Pages from 4-39 to 4-42 are not shown.

SW-419

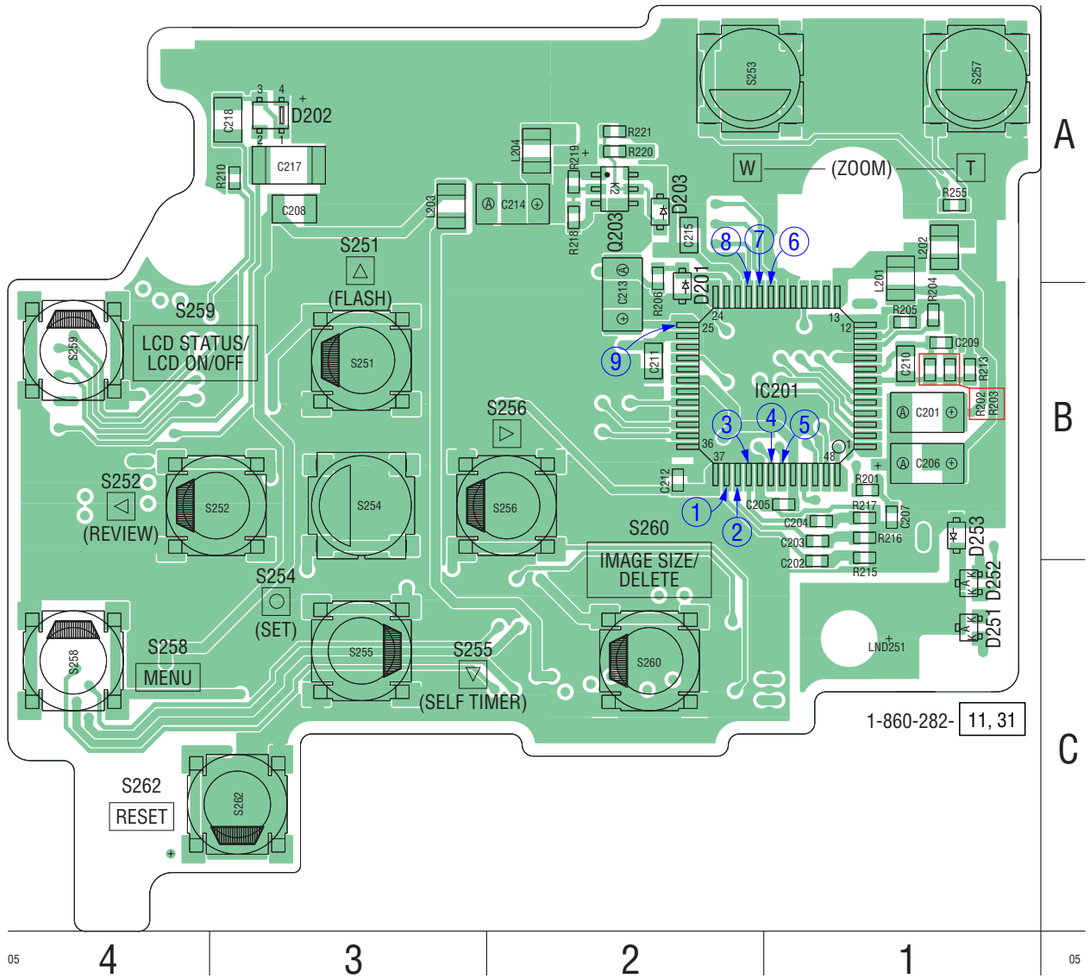
Note for Printed Wiring Board (See page 4-35).

: Uses unleaded solder.

SW-419 BOARD (SIDE A)



SW-419 BOARD (SIDE B)

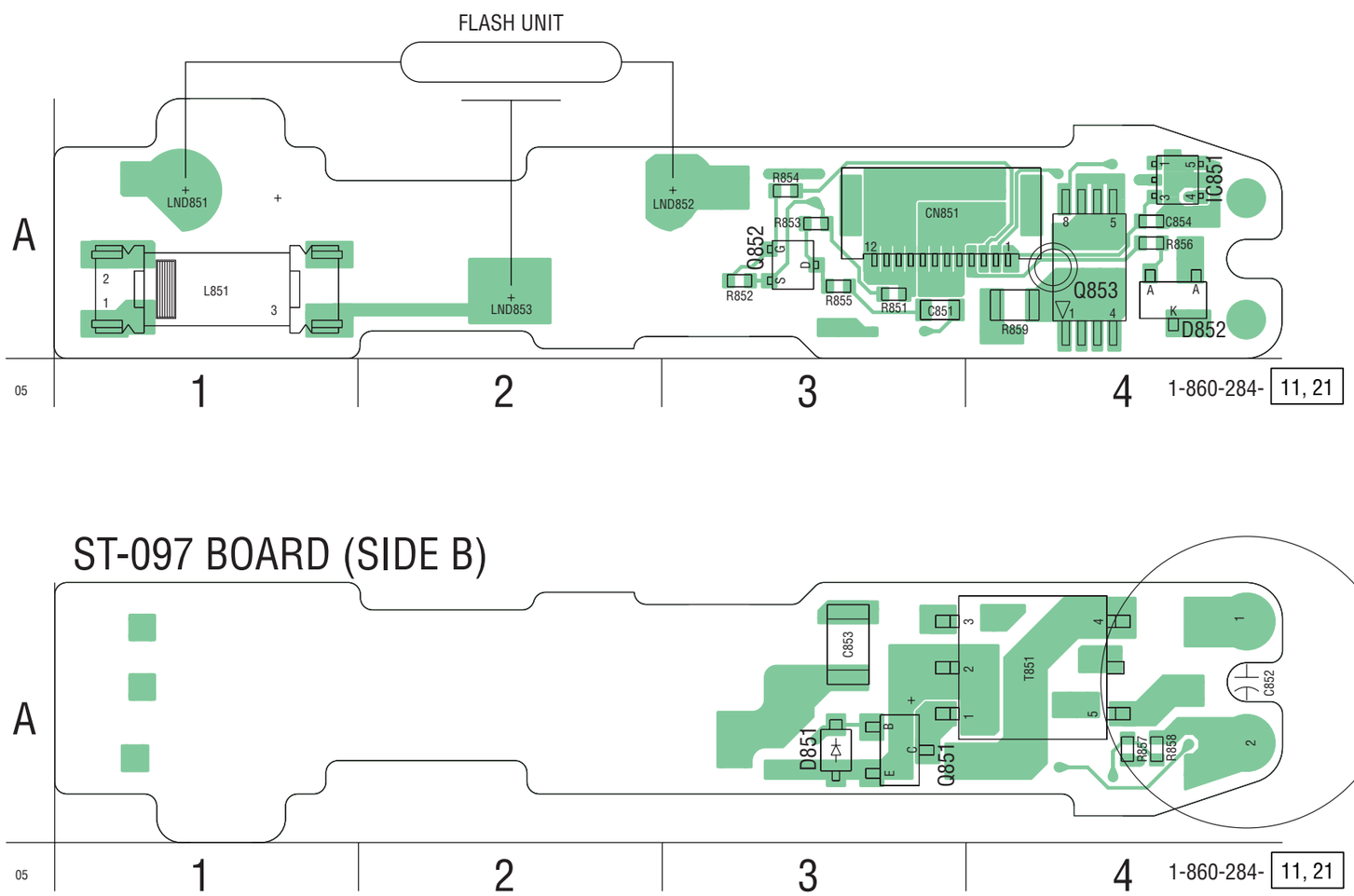


ST-097

Note for Printed Wiring Board (See page 4-35).

: Uses unleaded solder.

ST-097 BOARD (SIDE A)



ST-097 BOARD (SIDE B)

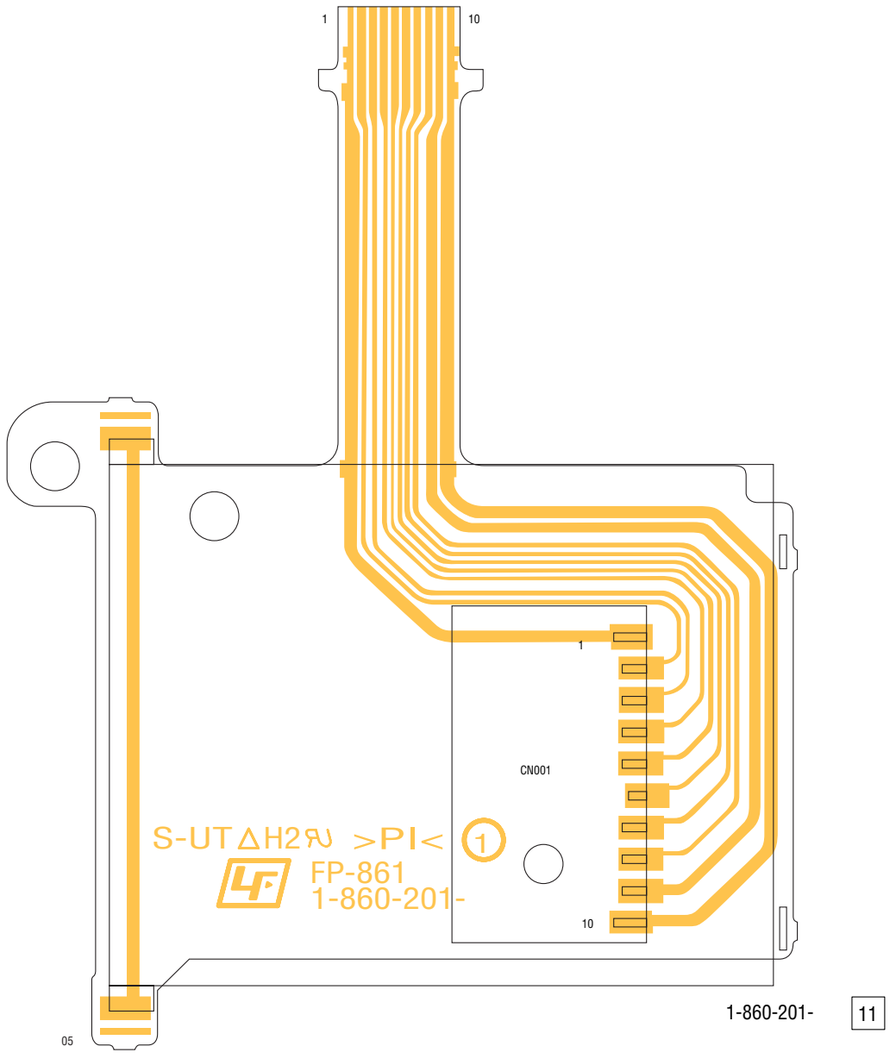
Note: C852 is not included in ST-097 complete board.

MS (FP-861 FLEXIBLE)

Note for Printed Wiring Board (See page 4-35).

: Uses unleaded solder.

MS BOARD
(FP-861 FLEXIBLE BOARD)

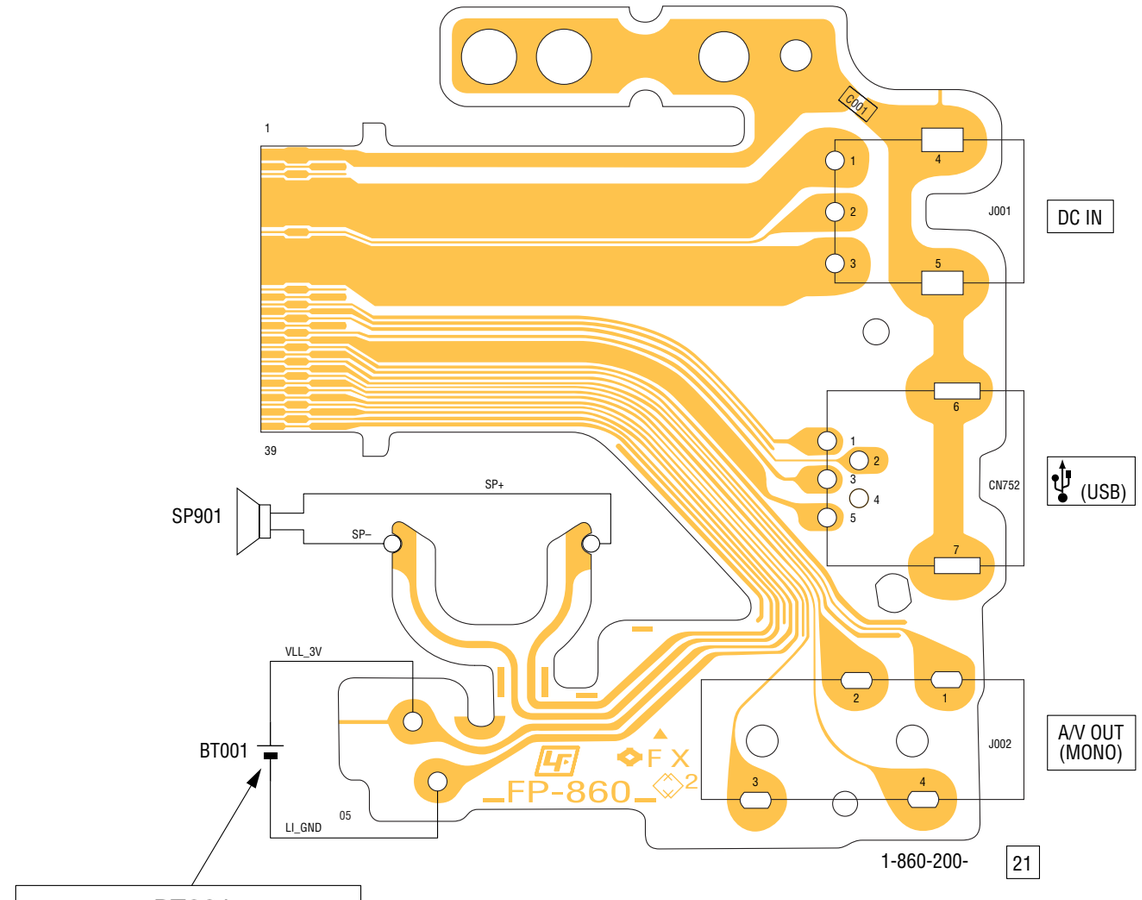


FP-860 FLEXIBLE

Note for Printed Wiring Board (See page 4-35).

: Uses unleaded solder.

FP-860 FLEXIBLE BOARD



4-3. PRINTED WIRING BOARDS

4-4. MOUNTED PARTS LOCATION

no mark : side A
* mark : side B

CD-500 BOARD

	C801	B-2
	C803	C-2
	C804	B-1
*	C805	A-2
*	C807	A-2
	C809	B-1
*	C810	A-2
	CN801	B-1
*	D801	A-1
*	D802	A-1
*	D803	A-1
*	FB801	A-2
	FB802	B-1
	IC801	B-3
	Q801	B-1
*	Q802	A-2
*	Q803	A-2
	Q804	B-1
	Q805	B-1
	R801	B-2
	R802	B-1
*	R803	A-3
*	R804	A-3
*	R805	A-2
	R806	B-2
	R807	B-2
	R808	B-1
*	R809	A-3
	R815	A-1
	R816	A-1
	R817	A-1

Mounted parts location of the CH-146 and SY-100 boards are not shown.
Page 4-50 is not shown.

4-3. PRINTED WIRING BOARDS

no mark : side A
* mark : side B

SW-419 BOARD

*	C201	B-1
*	C202	B-1
*	C203	B-1
*	C204	B-1
*	C205	B-1
*	C206	B-1
*	C207	B-1
*	C208	A-3
*	C209	B-1
*	C210	B-1
*	C211	B-2
*	C212	B-2
*	C213	B-2
*	C214	A-2
*	C215	A-2
	C216	C-3
*	C217	A-3
*	C218	A-3
	CN201	C-2
	CN202	C-4
	CN203	B-4
*	D202	A-3
*	D251	C-1
*	D252	C-1
*	D253	B-1
*	IC201	B-1
*	L201	A-1
*	L202	A-1
*	L203	A-3
*	L204	A-2
	Q201	C-3
	Q202	C-4
*	Q203	A-2
*	R201	B-1
*	R203	B-1
*	R204	B-1
*	R205	B-1
*	R206	A-2
*	R210	A-3
	R211	C-4
	R214	C-3
*	R215	B-1
*	R216	B-1
*	R217	B-1
*	R218	A-2
*	R219	A-2
*	R220	A-2
*	R221	A-2
	R253	C-3
	R254	C-3
*	R255	A-1
	R256	C-3
	R257	C-3
	R258	C-3
	R259	C-3
	R260	C-3
*	S251	B-3
*	S252	B-3
*	S253	A-2
*	S254	B-3
*	S255	C-3
*	S256	B-2
*	S257	A-1
*	S258	C-4
*	S259	B-4
*	S260	C-2
*	S262	C-3

ST-097 BOARD

	C851	A-3
*	C853	A-3
	C854	A-4
	CN851	A-3
*	D851	A-3
	D852	A-4
	IC851	A-4
	L851	A-1
*	Q851	A-3
	Q852	A-3
	Q853	A-4
	R851	A-3
	R852	A-3
	R853	A-3
	R854	A-3
	R855	A-3
	R856	A-4
*	R857	A-4
*	R858	A-4
	R859	A-4
*	T851	A-4

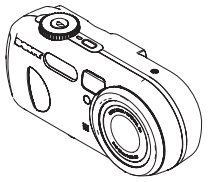
NOTE

5. REPAIR PARTS LIST

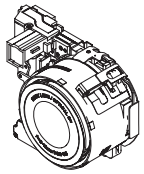
NOTE: Characters A to Z of the electrical parts list indicate location of exploded views in which the desired part is shown.

Link

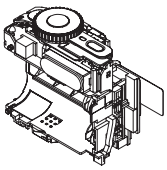
EXPLODED VIEWS



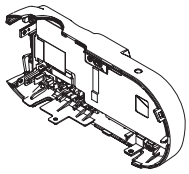
A FRONT CABINET BLOCK SECTION



B LENS BLOCK SECTION



C BT HOLDER BLOCK SECTION



D REAR CABINET BLOCK SECTION

Link

ELECTRICAL PARTS LIST

ACCESSORIES

CD-500 BOARD	B	ST-097 BOARD	C		
MS BOARD	C	SW-419 BOARD	D		

5. REPAIR PARTS LIST

SECTION 5
REPAIR PARTS LIST

NOTE:

- -XX, -X mean standardized parts, so they may have some differences from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- CAPACITORS:
  uF: µF
- COILS
  uH: µH
- RESISTORS
  All resistors are in ohms.
  METAL: metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F: nonflammable
- SEMICONDUCTORS
  In each case, u: µ, for example:
  uA...: µA... , uPA... , µPA... ,
  uPB... , µPB... , µPC... , µPC... ,
  uPD..., µPD...
- Abbreviation
  AR : Argentine model
  AUS : Australian model
  BR : Brazilian model
  CH : Chinese model
  CND : Canadian model
  HK : Hong Kong model
  J : Japanese model
  JE : Tourist model
  KR : Korean model

When indicating parts by reference number, please include the board name.

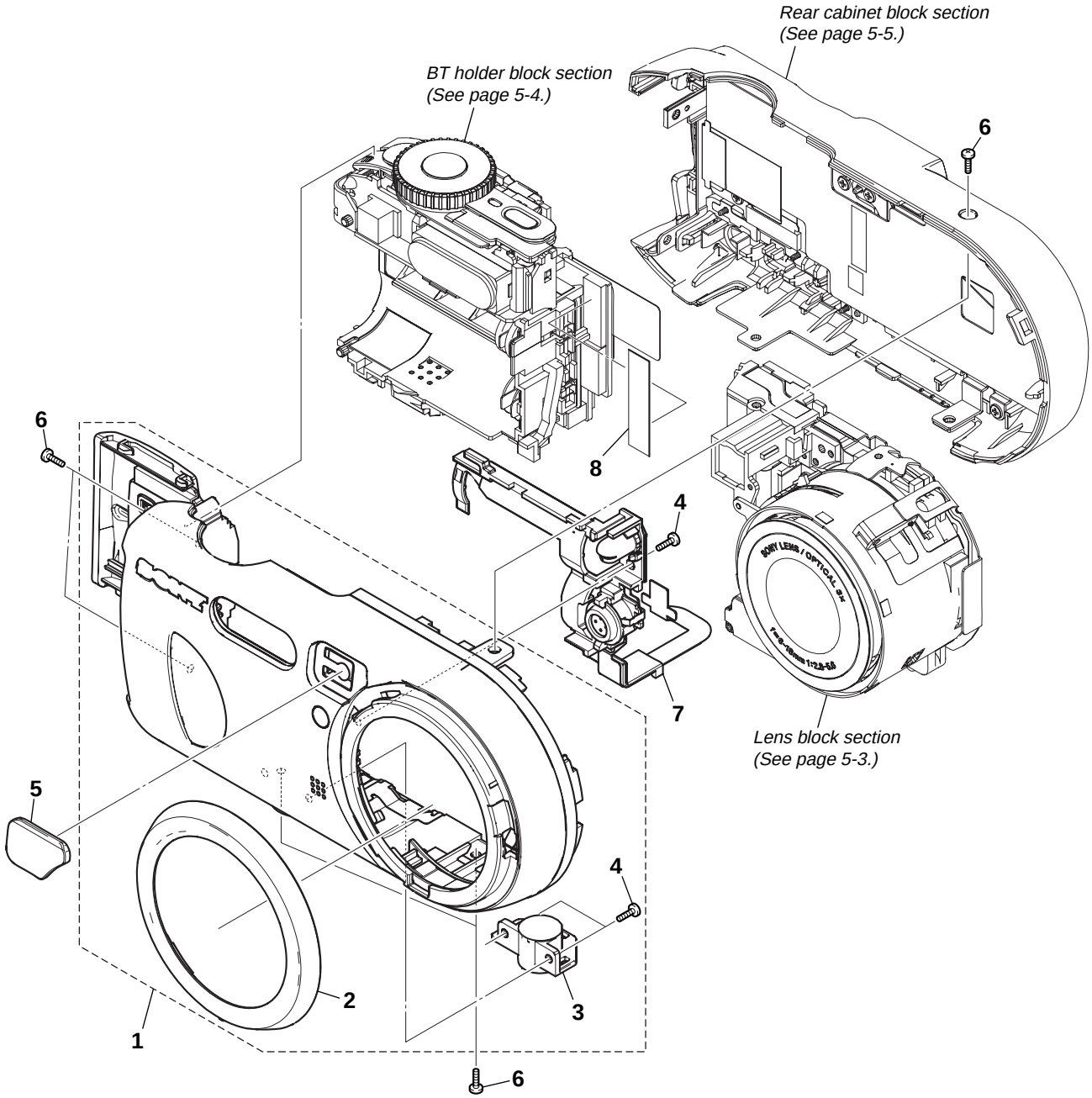
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

5. REPAIR PARTS LIST

5-1. EXPLODED VIEWS

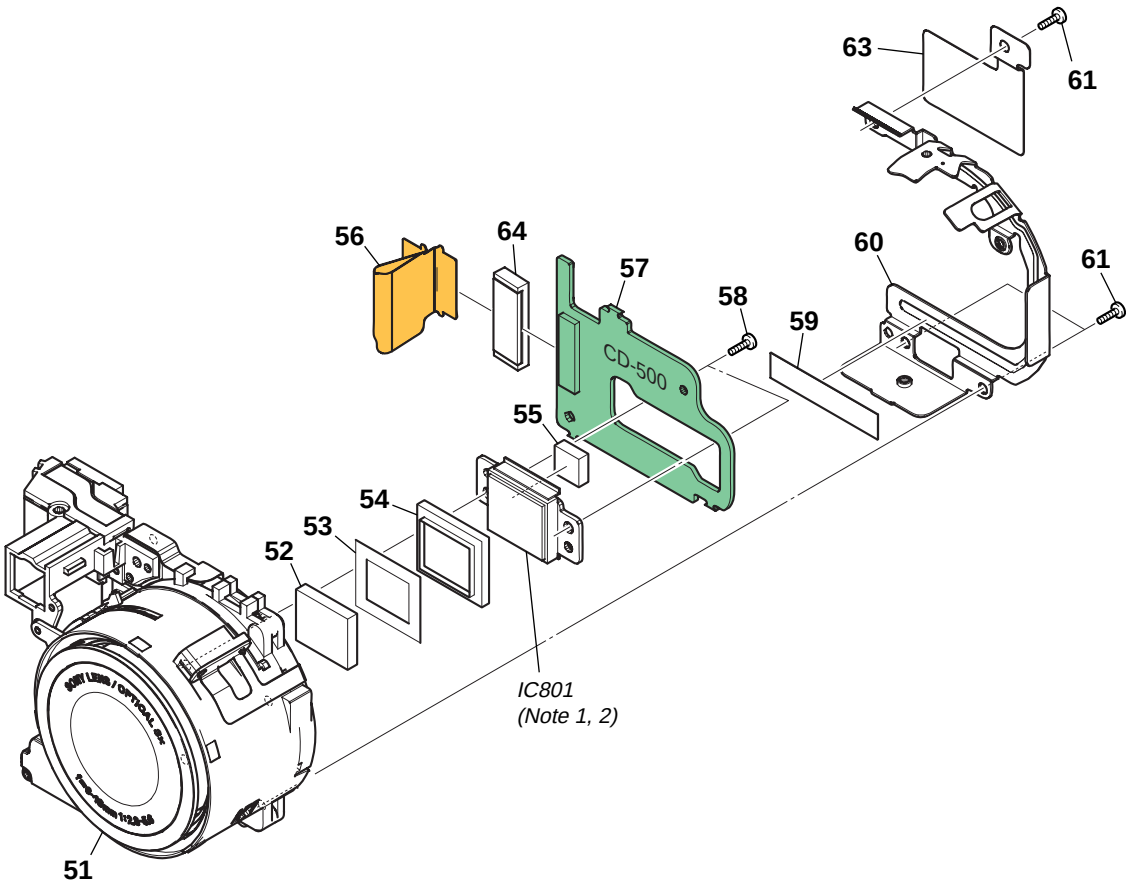
5-1-1. FRONT CABINET BLOCK SECTION



Ref. No.	Part No.	Description
1	X-3954-369-1	CABINET (FRONT) ASSY (520S) (SILVER)
1	X-3954-370-1	CABINET (FRONT) ASSY (520B) (BLUE) (EXCEPT J)
2	3-090-814-01	RING (520), LENS
3	3-080-977-01	TRIPOD
4	3-080-204-21	SCREW, TAPPING, P2
5	3-090-799-01	WINDOW (530), OVF
6	2-025-236-31	SCREW (M1.7)
7	1-478-386-11	MIC UNIT (MA-002)
8	3-941-343-21	TAPE (A)

5. REPAIR PARTS LIST

5-1-2. LENS BLOCK SECTION



(Note 1) IC801 is not included in CD-500 complete board.

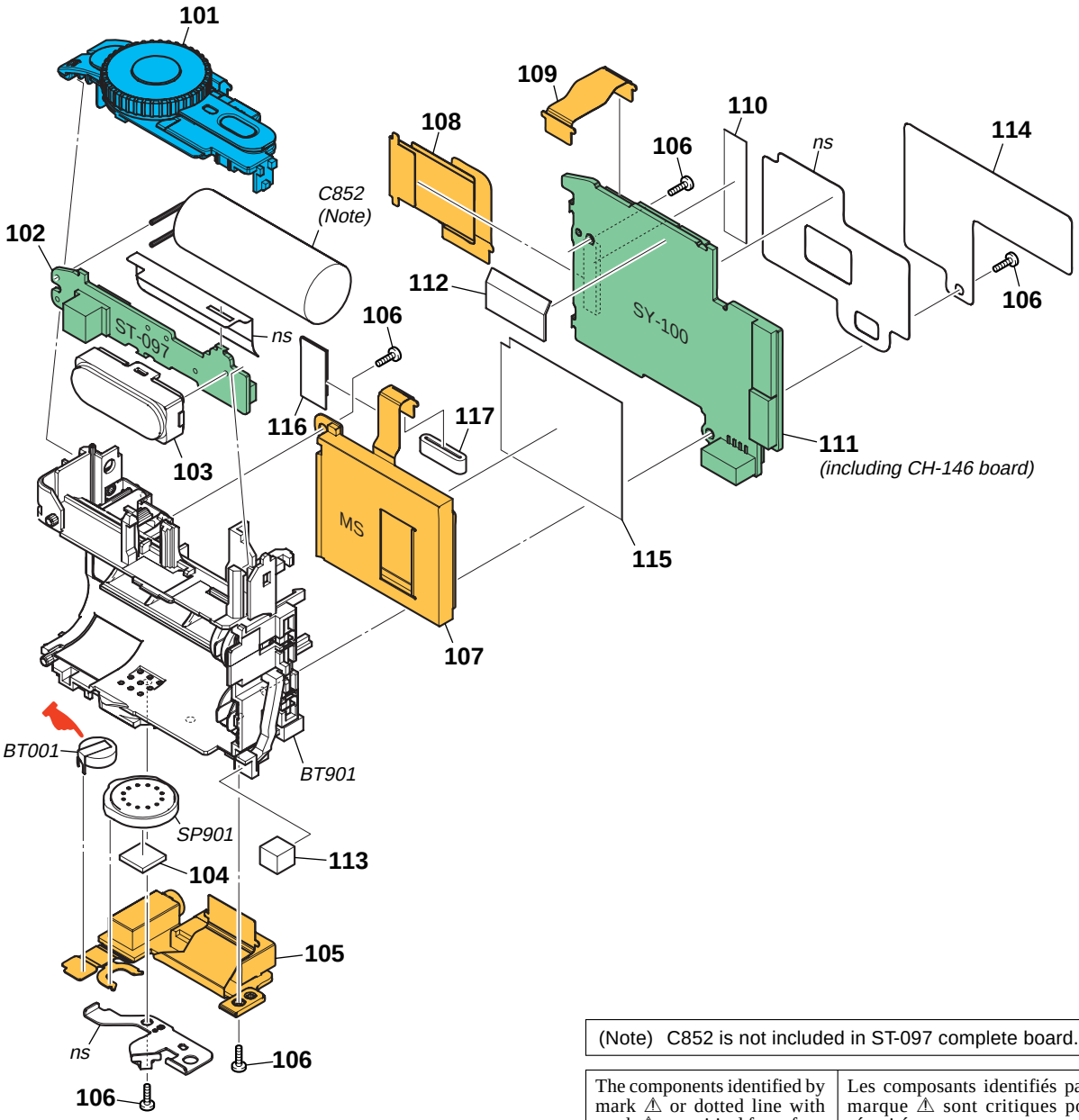
(Note 2) Be sure to read “Precuations for Replacement of CCD Imager” on page 4-8 when changing the CCD imager.

Ref. No.	Part No.	Description
51	1-758-914-21	LENS, VIDEO (CE02C)
52	1-788-103-11	OPTICAL FILTER BLOCK
53	3-076-569-01	PLATE, LIGHT INTERCEPTION
54	3-075-085-01	RUBBER (DQ), SEAL
55	3-091-448-01	SHEET (530), CCD RADIATION
56	1-860-194-11	FP-854 FLEXIBLE BOARD
57	A-7113-094-A	CD-500 BOARD, COMPLETE
58	3-080-204-21	SCREW, TAPPING, P2
59	3-091-943-01	SHEET (530), INSULATING, LENS
60	3-090-795-01	FRAME (530), LENS
61	3-078-890-11	SCREW, TAPPING
63	2-050-570-01	SHEET, CD COPPER LEAF
64	1-400-769-11	CORE, FERRITE
IC801	A-7112-263-A	CCD BLOCK ASSY (CCD IMAGER) (Note 1, 2)

5. REPAIR PARTS LIST

5-1-3. BT HOLDER BLOCK SECTION

ns: not supplied



: BT001 (BATTERY, LITHIUM SECONDARY)
(Refer to page 4-48.)

(Note) C852 is not included in ST-097 complete board.

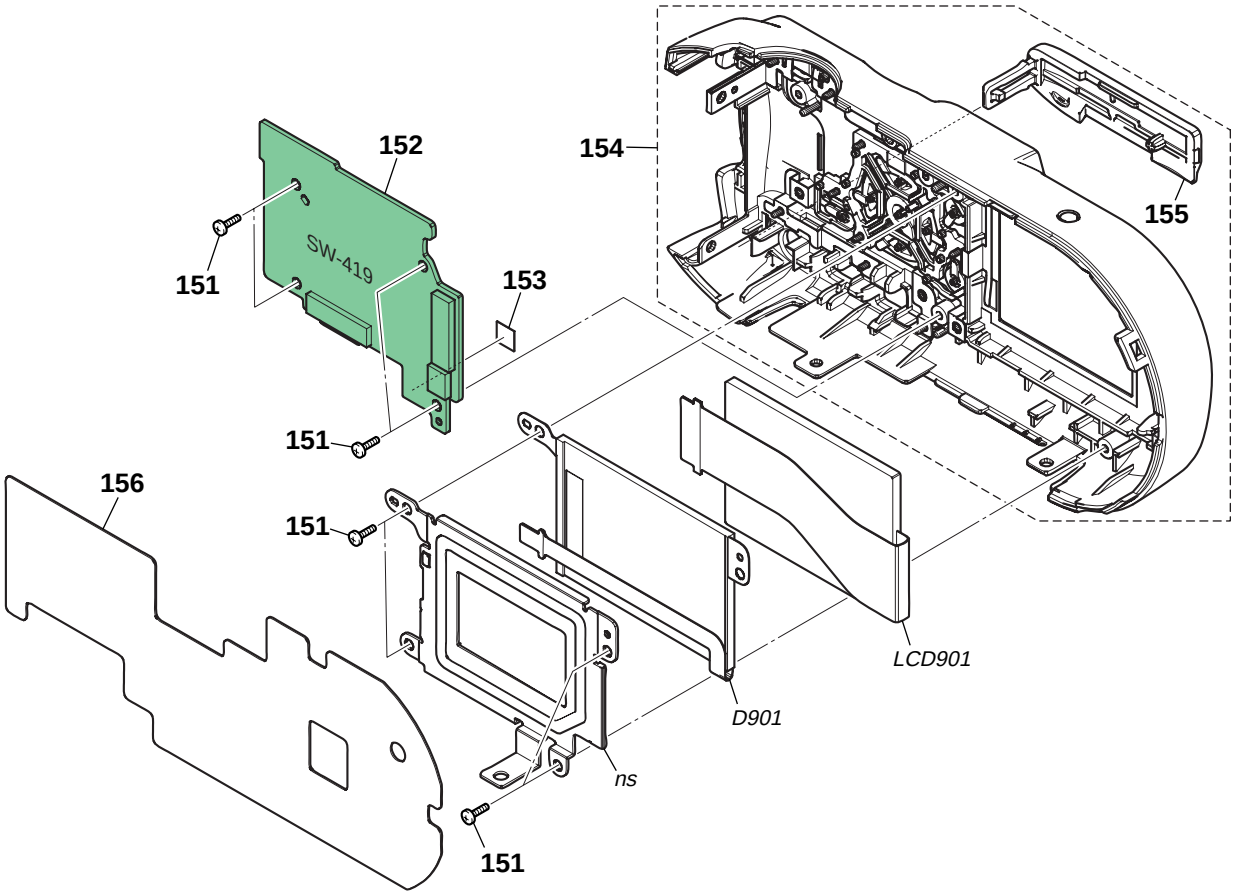
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description
101	1-478-384-11	SWITCH BLOCK, CONTROL
102	A-7113-093-A	ST-097 BOARD, COMPLETE
⚠103	1-478-349-11	FLASH UNIT
104	3-090-797-01	CUSHION, SP
105	1-860-200-21	FP-860 FLEXIBLE BOARD
106	3-080-204-21	SCREW, TAPPING, P2
107	A-7113-208-A	MS BOARD, COMPLETE
108	1-860-199-11	FP-859 FLEXIBLE BOARD
109	1-860-192-11	FP-852 FLEXIBLE BOARD
110	3-941-343-21	TAPE (A)
111	A-1059-806-A	SY-100 BOARD, COMPLETE (SERVICE) (including CH-146 board)
112	2-050-462-01	SHEET (530), RL ELECTROSTATIC
113	2-050-219-01	CUSHION, MA RETAINER
114	2-050-569-01	SHEET, SY COPPER LEAF
115	2-067-931-01	SHEET, MS SHEET METAL
116	2-050-538-01	SHEET, MS RADIATION
117	1-400-770-11	CORE, FERRITE
⚠BT001	1-528-999-51	BATTERY, LITHIUM SECONDARY
BT901	1-756-421-11	HOLDER, BATTERY (WITH TERMINAL)
⚠C852	1-100-737-11	CAP, ELECT 135MF (Note)
SP901	1-825-665-11	SPEAKER (1.3CM)

5. REPAIR PARTS LIST

5-1-4. REAR CABINET BLOCK SECTION

ns: not supplied



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description
151	3-078-890-11	SCREW, TAPPING
152	A-7113-092-A	SW-419 BOARD, COMPLETE
153	3-090-794-01	SHEET, RESET
154	X-3954-371-1	CABINET (REAR) ASSY (520S) (SILVER)
154	X-3954-372-1	CABINET (REAR) ASSY (520B) (BLUE) (EXCEPT J)

Ref. No.	Part No.	Description
155	3-090-789-11	COVER, JK
156	2-050-571-01	SHEET, CABINET (REAR RADIATION)
⚠D901	1-478-465-21	BLOCK, LIGHT GUIDE PLATE (1.5)
LCD901	1-805-500-21	LCD MODULE (COD15T1506E)

5-2. ELECTRICAL PARTS LIST

Ref. No.	Part No.	Description			
	A-7113-094-A	CD-500 BOARD, COMPLETE			
		**********			
		(IC801 is not included in this complete board.)			
		< CAPACITOR >			
C801	1-164-850-11	CERAMIC CHIP	10PF	0.5PF	50V
C803	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C804	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C805	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C807	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C809	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C810	1-135-957-91	TANTAL. CHIP	10uF	20%	16V
		< CONNECTOR >			
CN801	1-817-942-11	CONNECTOR, FPC (ZIF) 39P			
		< DIODE >			
D801	8-719-075-29	DIODE	SML-510MWT86S (AE/AF LOCK)		
D802	8-719-077-34	DIODE	SML-310YTT86 (FLASH CHARGE)		
D803	8-719-064-07	DIODE	SML-310LTT86 (SELF TIMER/RECORDING)		
		< FERRITE BEAD >			
FB801	1-414-228-11	INDUCTOR, FERRITE BEAD			
FB802	1-414-228-11	INDUCTOR, FERRITE BEAD			
		< IC >			
IC801	A-7112-263-A	CCD BLOCK ASSY (CCD IMAGER) (Note)			
		< TRANSISTOR >			
Q801	6-550-885-01	TRANSISTOR	2SC39320S2S0		
Q802	6-550-119-01	TRANSISTOR	DTC144EMT2L		
Q803	6-550-119-01	TRANSISTOR	DTC144EMT2L		
Q804	6-550-119-01	TRANSISTOR	DTC144EMT2L		
Q805	6-550-119-01	TRANSISTOR	DTC144EMT2L		
		< RESISTOR >			
R801	1-218-960-11	RES-CHIP	3.9K	5%	1/16W
R802	1-216-864-11	SHORT CHIP	0		
R803	1-218-990-11	SHORT CHIP	0		
R804	1-218-989-11	RES-CHIP	1M	5%	1/16W
R805	1-220-184-11	RES-CHIP	1.3K	5%	1/16W
R806	1-218-957-11	RES-CHIP	2.2K	5%	1/16W
R807	1-218-953-11	RES-CHIP	1K	5%	1/16W
R808	1-218-969-11	RES-CHIP	22K	5%	1/16W
R809	1-218-980-11	RES-CHIP	180K	5%	1/16W
R815	1-218-940-11	RES-CHIP	82	5%	1/16W
R816	1-218-940-11	RES-CHIP	82	5%	1/16W
R817	1-218-952-11	RES-CHIP	820	5%	1/16W

Electrical parts list of the CH-146 board is not shown.
Pages 5-7 is not shown.

(Note) Be sure to read “Precautions for Replacement of CCD Imager” on page 4-8 when changing the CCD imager.

MS | **ST-097** | **SW-419**

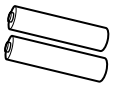
Ref. No.	Part No.	Description			
	A-7113-208-A	MS BOARD, COMPLETE			
		**********			
		< CONNECTOR >			
CN001	1-815-572-61	CONNECTOR, MEMORY STICK			
	A-7113-093-A	ST-097 BOARD, COMPLETE			
		**********			
		(C852 is not included in this complete board.)			
		< CAPACITOR >			
C851	1-127-715-91	CERAMIC CHIP	0.22uF	10%	16V
⚠C852	1-100-737-11	CAP, ELECT	135uF		310V
⚠C853	1-100-758-11	CERAMIC CHIP	0.047uF	10%	250V
C854	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
		< CONNECTOR >			
CN851	1-816-644-31	FFC/FPC CONNECTOR (LIF) 12P			
		< DIODE >			
⚠D851	8-719-073-01	DIODE MA111-(K8).S0			
⚠D852	6-500-962-01	DIODE HAU160C030STP			
		< IC >			
⚠IC851	6-703-635-01	IC TND721MH5-S-TL-E			
		< COIL >			
⚠L851	1-456-193-11	COIL, TRIGGER			
		< TRANSISTOR >			
⚠Q851	6-550-759-01	TRANSISTOR	CPH3235-S-TL-E		
⚠Q852	6-550-887-01	TRANSISTOR	RTF025N03TL		
⚠Q853	6-550-656-01	TRANSISTOR	CY25BAJ-8F-T23		
		< RESISTOR >			
R851	1-218-957-11	RES-CHIP	2.2K	5%	1/16W
R852	1-218-977-11	RES-CHIP	100K	5%	1/16W
R853	1-218-956-11	RES-CHIP	1.8K	5%	1/16W
R854	1-218-965-11	RES-CHIP	10K	5%	1/16W
R855	1-218-943-11	RES-CHIP	150	5%	1/16W
R856	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R857	1-218-937-11	RES-CHIP	47	5%	1/16W
R858	1-218-989-11	RES-CHIP	1M	5%	1/16W
R859	1-216-121-11	RES-CHIP	1M	5%	1/10W
		< TRANSFORMER >			
⚠T851	1-437-737-11	TRANSFORMER, DC-DC CONVERTER			
	A-7113-092-A	SW-419 BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C201	1-100-539-91	TANTAL. CHIP	47uF	20%	6.3V
C202	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C203	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C204	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C205	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C206	1-113-986-11	TANTAL. CHIP	2.2uF	20%	25V
C207	1-164-939-11	CERAMIC CHIP	0.0022uF	10%	50V
C208	1-100-670-11	CERAMIC CHIP	4.7uF	20%	16V
C209	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C210	1-164-739-11	CERAMIC CHIP	560PF	5%	50V
C211	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C212	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C213	1-113-994-11	TANTAL. CHIP	6.8uF	20%	16V
C214	1-165-897-11	TANTAL. CHIP	22uF	20%	10V
C215	1-165-908-11	CERAMIC CHIP	1uF	10%	10V
C216	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C217	1-127-861-11	CERAMIC CHIP	2.2uF	10%	16V
C218	1-127-573-11	CERAMIC CHIP	1uF	10%	16V
		< CONNECTOR >			
CN201	1-817-942-11	CONNECTOR, FPC (ZIF) 39P			
CN202	1-816-654-11	FFC/FPC CONNECTOR (LIF) 6P			
CN203	1-794-410-11	CONNECTOR, FPC (ZIF) 27P			
		< DIODE >			
D202	6-500-054-01	DIODE RB481YT2R			
D251	6-500-776-01	DIODE MAZW068H0LS0			
D252	6-500-776-01	DIODE MAZW068H0LS0			
D253	8-719-056-23	DIODE MA2S111-(K8).SO			
		< IC >			
IC201	6-705-547-01	IC CM7103L43-T4			
		< COIL >			
L201	1-469-846-11	INDUCTOR	47uH		
L202	1-400-588-11	INDUCTOR, LAMINATE CHIP	10uH		
L203	1-400-588-11	INDUCTOR, LAMINATE CHIP	10uH		
L204	1-469-846-11	INDUCTOR	47uH		
		< TRANSISTOR >			
Q201	6-550-119-01	TRANSISTOR	DTC144EMT2L		
Q202	6-550-150-01	TRANSISTOR	SSM3J09FU (TE85L)		
Q203	8-729-056-27	TRANSISTOR	UMF6NTR		
		< RESISTOR >			
R201	1-218-953-11	RES-CHIP	1K	5%	1/16W
R203	1-218-975-11	RES-CHIP	68K	5%	1/16W
R204	1-208-935-11	METAL CHIP	100K	0.5%	1/16W
R205	1-208-707-11	METAL CHIP	10K	0.5%	1/16W
R206	1-218-965-11	RES-CHIP	10K	5%	1/16W
R210	1-218-979-11	RES-CHIP	150K	5%	1/16W
R211	1-218-985-11	RES-CHIP	470K	5%	1/16W
R214	1-218-985-11	RES-CHIP	470K	5%	1/16W
R215	1-208-677-11	METAL CHIP	560	0.5%	1/16W
R216	1-208-677-11	METAL CHIP	560	0.5%	1/16W
R217	1-208-677-11	METAL CHIP	560	0.5%	1/16W
R218	1-218-965-11	RES-CHIP	10K	5%	1/16W
R219	1-218-973-11	RES-CHIP	47K	5%	1/16W
R220	1-218-979-11	RES-CHIP	150K	5%	1/16W
R221	1-218-973-11	RES-CHIP	47K	5%	1/16W
R253	1-218-954-11	RES-CHIP	1.2K	5%	1/16W

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

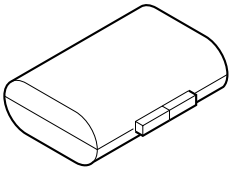
Ref. No.	Part No.	Description			
R254	1-218-954-11	RES-CHIP	1.2K	5%	1/16W
R255	1-218-954-11	RES-CHIP	1.2K	5%	1/16W
R256	1-218-955-11	RES-CHIP	1.5K	5%	1/16W
R257	1-218-955-11	RES-CHIP	1.5K	5%	1/16W
R258	1-218-959-11	RES-CHIP	3.3K	5%	1/16W
R259	1-218-959-11	RES-CHIP	3.3K	5%	1/16W
R260	1-218-953-11	RES-CHIP	1K	5%	1/16W
		< SWITCH >			
S251	1-771-138-82	SWITCH, KEY BOARD (▲ (FLASH))			
S252	1-771-138-82	SWITCH, KEY BOARD (◀ (REVIEW))			
S253	1-786-157-31	TACTILE SWITCH (ZOOM (W))			
S254	1-786-157-31	TACTILE SWITCH (● (SET))			
S255	1-771-138-82	SWITCH, KEY BOARD (▼ (SELF TIMER))			
S256	1-771-138-82	SWITCH, KEY BOARD (▶ (MACRO))			
S257	1-786-157-31	TACTILE SWITCH (ZOOM (T))			
S258	1-771-138-82	SWITCH, KEY BOARD (MENU)			
S259	1-771-138-82	SWITCH, KEY BOARD (LCD STATUS / LCD ON/OFF)			
S260	1-771-138-82	SWITCH, KEY BOARD (IMAGE SIZE/DELETE)			
S262	1-771-138-82	SWITCH, KEY BOARD (RESET)			

Electrical parts list of the SY-100 board is not shown.
Pages 5-10 to 5-13 are not shown.

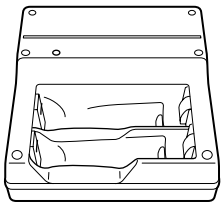
Checking supplied accessories.



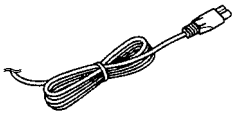
HR6 (size AA) Ni-MH batteries (2)
(not supplied)



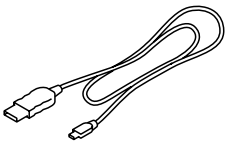
Battery case (1)
3-074-757-01



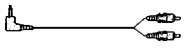
Battery charger (BC-CS2) (1)
⚠ 1-477-814-11 (US, CND, JE, J)
⚠ 1-477-814-22
(AEP, UK, E, HK, AR, AUS)
⚠ 1-477-814-33 (CH, KR)



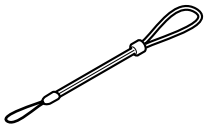
Power cord (1)
⚠ 1-769-608-11 (AEP, E)
⚠ 1-776-985-11 (KR)
⚠ 1-782-476-13 (CH)
⚠ 1-783-374-11 (UK, HK)
⚠ 1-783-952-21 (AR)
⚠ 1-790-107-22 (US, CND)
⚠ 1-790-732-12 (JE, J)
⚠ 1-827-945-11 (AUS)



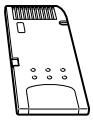
USB cable (1)
1-827-038-11



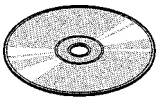
A/V connecting cable (1)
1-824-111-11



Wrist strap (1)
3-089-555-01



"Memory Stick" (16MB) (1)
(not supplied)



CD-ROM
(SPVD-012 USB driver) (1)
3-091-338-01 (US, J)
3-091-339-01
(EXCEPT US, J)

Conversion Adaptor (1)
⚠ 1-569-007-11 (E)
⚠ 1-573-856-12 (JE)

Other accessories

3-091-340-01 MANUAL, INSTRUCTION (for BASIC) (JAPANESE) (J)
3-091-340-11 MANUAL, INSTRUCTION (ENGLISH)
(US, CND, AEP, UK, E, HK, AUS, CH, JE)
3-091-340-21 MANUAL, INSTRUCTION (FRENCH, ITALIAN) (CND, AEP)
3-091-340-31 MANUAL, INSTRUCTION (SPANISH, PORTUGUESE)
(AEP, E, AR, JE)
3-091-340-41 MANUAL, INSTRUCTION (GERMAN, DUTCH) (AEP)

3-091-340-51 MANUAL, INSTRUCTION (TRADITIONAL CHINESE,
SIMPLIFIED CHINESE) (E, CH, HK, JE)
3-091-340-61 MANUAL, INSTRUCTION (RUSSIAN, SWEDISH) (AEP)
3-091-340-71 MANUAL, INSTRUCTION (ARABIC, PERSIAN) (E)
3-091-340-81 MANUAL, INSTRUCTION (KOREAN) (KR, JE)
3-091-340-91 MANUAL, INSTRUCTION (POLISH, CZECH) (AEP)

3-091-341-11 MANUAL, INSTRUCTION (HUNGARIAN, SLOVAK) (AEP)
3-091-347-01 MANUAL, INSTRUCTION (for APPLICATION) (J)

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

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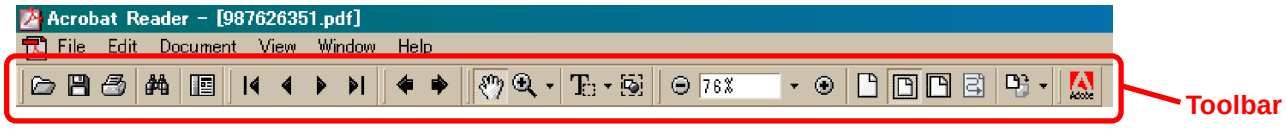
[Description of main button functions on toolbar of the Adobe Acrobat Reader Ver5.0 (for Windows)]



Printing a text

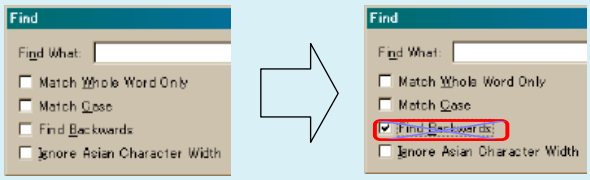
1. Click the Print button .
2. Specify a printer, print range, number of copies, and other options, and then click [OK].

Application of printing:
To set a range to be printed within a page, select the graphic selection tool and drag on the page to enclose a range to be printed, and then click the Print button.

Finding a text

1. Click the Find button .
2. Enter a character string to be found into a text box, and click the [Find]. (Specify the find options as necessary)

Application to the Service Manual:
To execute "find" from current page toward the previous pages, select the check box "Find Backward" and then click the "Find".



3. Open the find dialog box again, and click the [Find Again] and you can find the matched character strings displayed next. (Character strings entered previously are displayed as they are in the text box.)

Application to the Service Manual:
The parts on the drawing pages (block diagrams, circuit diagrams, printed circuit boards) and parts list pages in a text can be found using this find function. For example, find a Ref. No. of IC on the block diagram, and click the [Find Again] continuously, so that you can move to the Ref. No. of IC on the circuit diagram or printed circuit board diagram successively.
Note: The find function may not be applied to the Service Manual depending on the date of issue.

Switching a page

- To move to the first page, click the .
- To move to the last page, click the .
- To move to the previous page, click the .
- To move to the next page, click the .

Reversing the screens displayed once

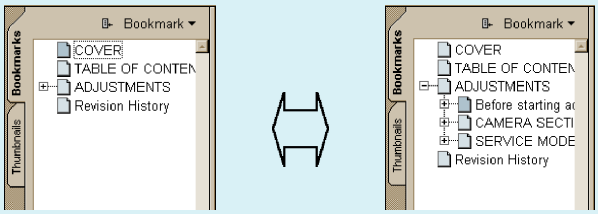
- To reverse the previous screens (operation) one by one, click the .
- To advance the reversed screens (operation) one by one, click the .

Application to the Service Manual:
This function allows you to go and back between circuit diagram and printed circuit board diagram, and accordingly it will be convenient for the voltage check.

Moving with link

1. Select either palm tool , zoom tool , text selection tool , or graphic selection tool .
2. Place the pointer in the position in a text where the link exists (such as a button on cover and the table of contents page, or blue characters on the removal flowchart page or drawing page), and the pointer will change to the forefinger form .
3. Then, click the link. (You will go to the link destination.)

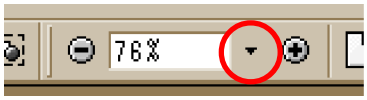
Moving with bookmark:
Click an item (text) on the bookmark pallet. and you can move to the link destination. Also, clicking can display the hidden items.
(To go back to original state, click)



Zooming or rotating the screen display

"Zoom in/out"

- Click the triangle button in the zoom control box to select the display magnification. Or, you may click or for zooming in or out.



"Rotate"

- Click rotate tool , and the page then rotates 90 degrees each.

Application to the Service Manual:
The printed circuit board diagram you see now can be changed to the same direction as the set.

Revision History

Ver.	Date	History	Contents	S.M. Rev. issued
1.0	2004.04	Official Release	—	—

DSC-P73

Ver 1.1 2004. 05
Revision History

SECTION 6
ADJUSTMENTS

Auto-ADJ

Link

- Before starting adjustments
  - Adjusting items when replacing main parts and boards
- SERVICE MODE
  - SERVICE MODE
- CAMERA SECTION ADJUSTMENTS
  - PREPARATIONS BEFORE ADJUSTMENTS
  - AUTOMATIC ADJUSTMENT
  - VIDEO SYSTEM ADJUSTMENTS
  - CAMERA SYSTEM ADJUSTMENTS
  - LCD SYSTEM ADJUSTMENTS
  - ERROR
  - INITIALIZATION OF DATA

• Use This Service Manual together with the Automatic Adjustment Program (DSC-P73 Auto-Adj Ver_1.□r□□.exe).
Note: □ (numeric value) of the file name varies depending on the version of Automatic Adjustment Program.

Contents of LEVEL 2 and LEVEL 3 Service Manual

CONTENTS	LEVEL 2	LEVEL 3
1. SERVICE NOTE	○	×
2. DISASSEMBLY	○	×
3. BLOCK DIAGRAMS	OVERALL POWER	×
4. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS	CD-500, SW-419, ST-097, MS BOARD	CH-146, SY-100 BOARD
5. REPAIR PARTS LIST	EXPLODED VIEWS	×
	ELECTRICAL PARTS	○ (CH-146, SY-100 BOARD)

SONY®

9-876-733-51

Sony EMCS Co.

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* The color reproduction frame is shown on page 6-26.

SECTION 6
ADJUSTMENTS

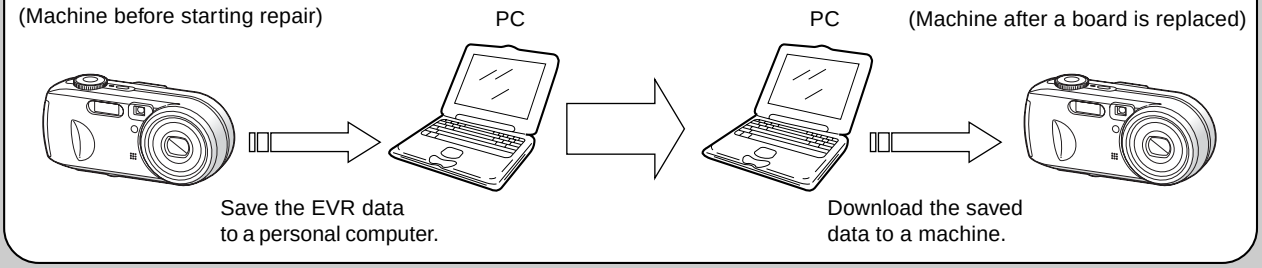
Before starting adjustment

EVR Data Re-writing Procedure When Replacing Board

The data that is stored in the repair board, is not necessarily correct.
Perform either procedure 1 or procedure 2 or procedure 3 when replacing board.

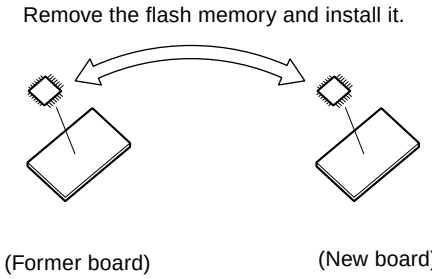
Procedure 1

Save the EVR data of the machine in which a board is going to be replaced. Download the saved data after a board is replaced.



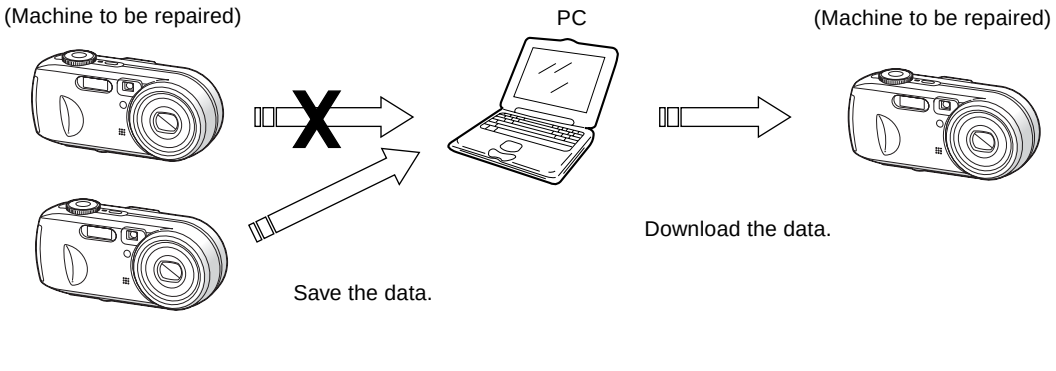
Procedure 2

Remove the flash memory from the board of the machine that is going to be repaired. Install the removed flash memory to the replaced board.



Procedure 3

When the data cannot be saved due to defective flash memory, or when the flash memory cannot be removed or installed, save the data from the same model of the same destination, and download it.



After the EVR data is saved and downloaded, check the respective items of the EVR data.
(Refer to page 6-2 for the items to be checked.)

1-1. Adjusting items when replacing main parts and boards

When replacing main parts and boards, adjust the items indicated by ● in the following table.
Note : The automatic Adjustment Program does not support the “Initialization of data”. Perform it manually.

Adjusting item	Adjustment	Replaced parts														
		Block replacement					Mounted parts replacement					Board replacement				Flash memory replacement
		Lens block	Microphone unit (AF illumination LED)	Flash unit	LCD block LCD901 LCD unit	LCD block D901 Back light unit	CD-500 board IC801 (CCD imager)	CH-146 board IC101 (Timing gen., CCD signal process)	SY-100 board IC302 (Camera DSP)	SY-100 board IC301 (Video amp.)	SW-419 board IC201 (LCD driver)	CD-500 board (COMPLETE)	CH-146 board (COMPLETE)	SW-419 board (COMPLETE)	SY-100 board (COMPLETE)	SY-100 board IC501 (Camera system control) (With built-in flash memory)
(Note)	Initialization of data														●	●
VIDEO adjustment	Video output level adj.								●	●					●	●
CAMERA adjustment 1	Flange back adj.	●					●					●			●	●
CAMERA adjustment 2	Flange back check	●					●					●			●	●
CAMERA adjustment 3	F No. compensation	●					●	●				●	●		●	●
	Mechanical shutter adj.															
	Light value adj.															
	AWB 3200K standard data input															
	AWB 5800K standard data input															
	AWB 5800K check															
	AWB 3200K check															
	CCD linearity check															
	Color reproduction adj.															
	CCD white defect compensation check															
	CCD black defect compensation check															
CAMERA adjustment 4	Strobe adj.	●	●	●			●	●				●	●		●	●
	Auto focus illumination check															
LCD adjustment	LCD initial data input															
	VCO adj.															
	Contrast adj.				●	●			●		●			●	●	●
	V-COM adj.															
	White Balance adj.															

Table 6-1-1

6-1. CAMERA SECTION ADJUSTMENTS

1-1. PREPARATIONS BEFORE ADJUSTMENTS

1-1-1. List of Service Tools

• Oscilloscope • Color monitor • Vectorscope • AC power adapter
• Calculating machine capable of calculating hexadecimal numbers.

J-1

Personal computer

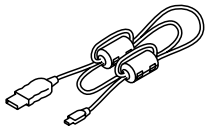
OS: Windows98/98SE/
Me/2000/
XP Home/XP Pro
USB connector × 2

J-2

HASP key and application for adjustment (SEUS)

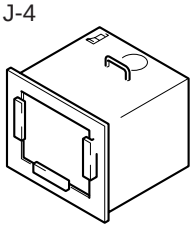
Contact our service headquater of each area how to get the application for adjustment (SEUS) and HASP key.

J-3



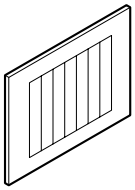
USB cable
1-827-038-11

J-4



Pattern box PTB-450
J-6082-200-A
or
Small pattern box
PTB-1450
J-6082-557-A

J-5

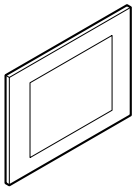


Color bar chart

For PTB-450:
J-6020-250-A

For PTB-1450:
J-6082-559-A

J-6

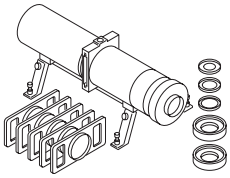


Clear chart

For PTB-450:
J-6080-621-A

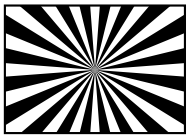
For PTB-1450:
J-6082-560-A

J-7



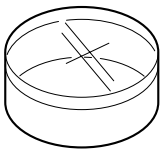
Minipattern box
J-6082-353-B

J-8



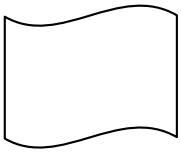
Siemens star chart
J-6080-875-A

J-9



Filter for color temperature correction (C14)
J-6080-058-A

J-10



Back ground paper
J-2501-130-A

Fig. 6-1-1

1-1-2. Preparations

1) Connect the equipment for adjustments according to Fig. 6-1-3.
2) Start up the application for adjustment (SEUS).

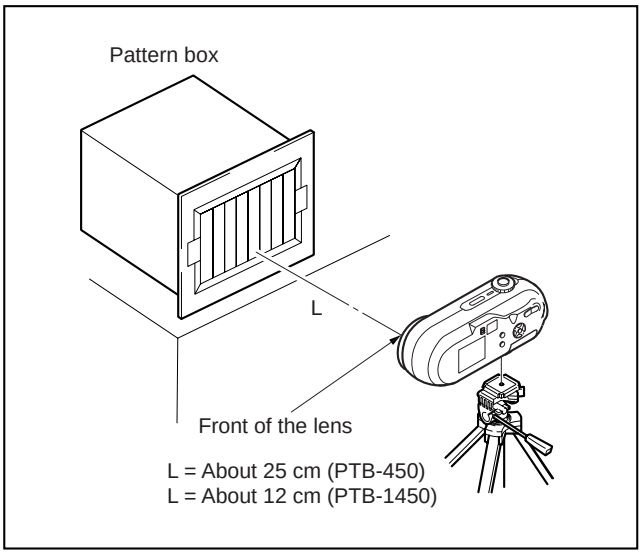


Fig. 6-1-2

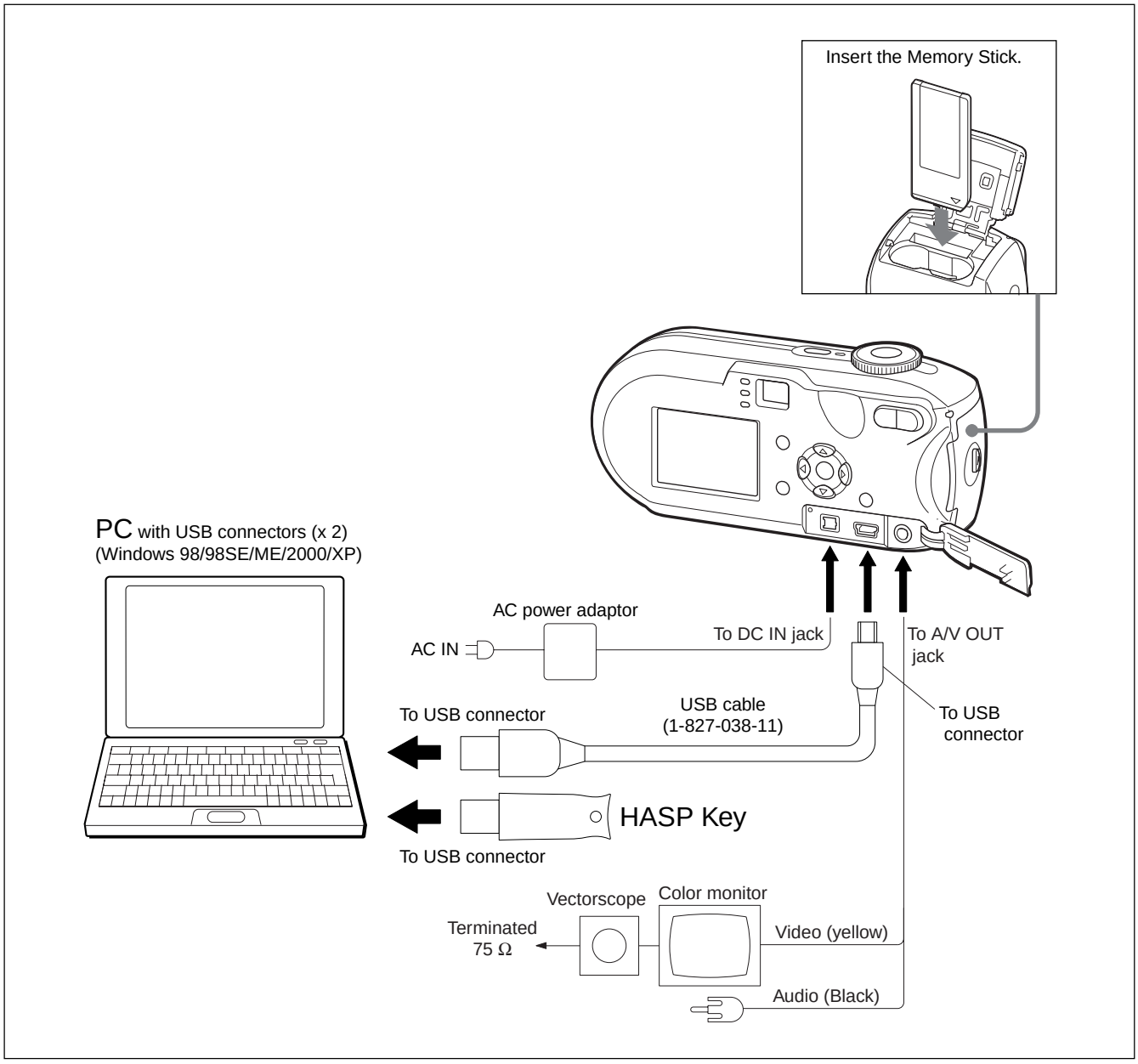


Fig. 6-1-3

1-1-3. Precautions

1. Setting the Switch

Unless otherwise specified, set the switches as follows and perform adjustments.

1. Mode Dial ..... P (Program auto)
2. ZOOM switch
   (SW-419 board S253, S257) ..... WIDE end
3. Video Out (SET UP setting) ..... NTSC
4. Digital Zoom (SET UP setting) ..... Off
5. EV (Menu items) 0EV
6. Focus (Menu items) ..... Multi AF
7. WB (Menu items) ..... Auto
8. ISO (Menu items) ..... Auto
9. Flash Level (Menu items) ..... Normal
10. P.Effect (Menu items) ..... Off
11. Saturation (Menu items) ..... Normal
12. Contrast (Menu items) ..... Normal
13. Sharpness (Menu items) ..... Normal

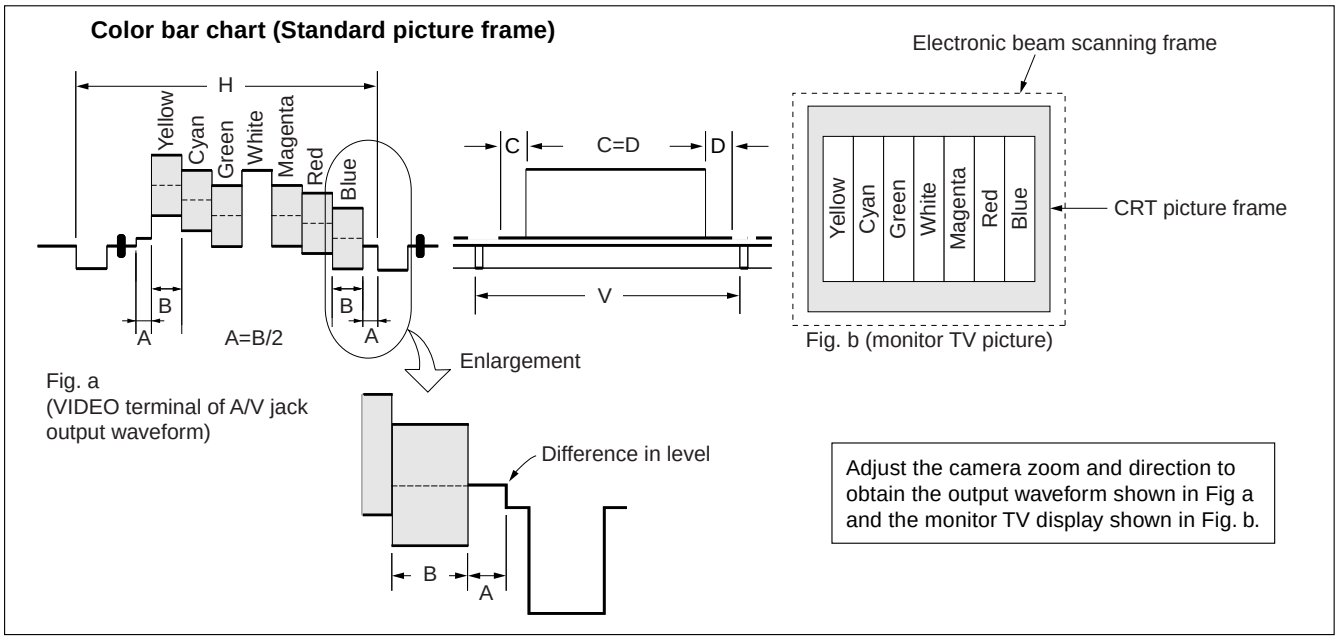


Fig. 6-1-4

2. Subjects

1) Color bar chart (Standard picture frame).
   When performing adjustments using the color bar chart, adjust the picture frame as shown in Fig. 6-1-4. (Standard picture frame)
2) Clear chart (Standard picture frame)
   Remove the color bar chart from the pattern box and insert a clear chart in its place. (Do not perform zoom operations during this time)

3. Preparing the Flash Adjustment Box

A dark room is required to provide an accurate flash adjustment. If it is not available, prepare the flash adjustment box as given below;

1) Provide woody board A, B and C of 15 mm thickness.

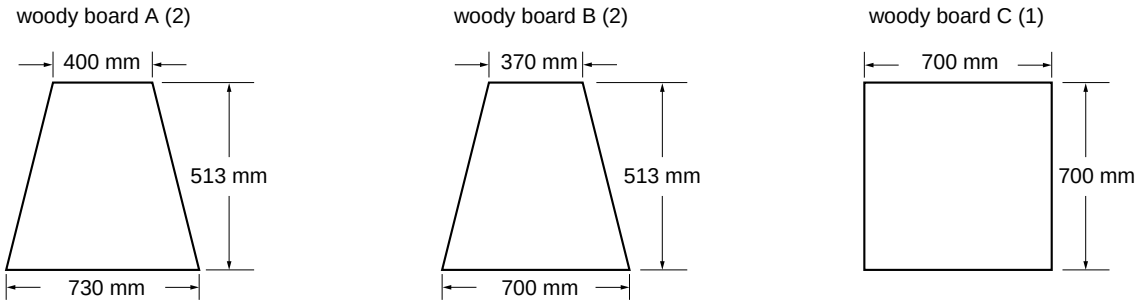


Fig. 6-1-5

2) Apply black mat paint to one side of woody board A and B.
3) Attach background paper (J-2501-130-A) to woody board C.
4) Assemble so that the black sides and the background paper side of woody board A, B and C are internal. (Fig. 6-1-6)

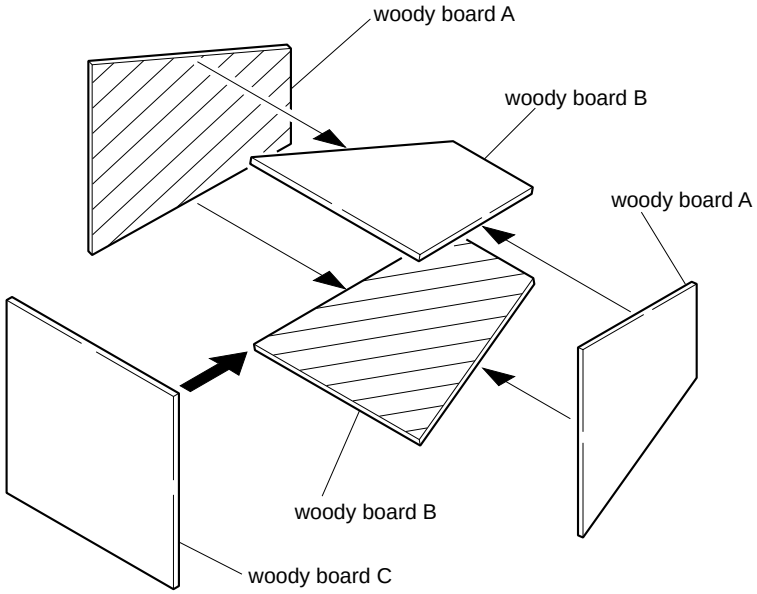


Fig. 6-1-6

1-1-4. Using Method of SEUS

The application for adjustment (SEUS) is used to change the coefficient for calculating the signal processing or EVR data. The SEUS performs two-way communication between PC and set through the USB terminal. The two-way communication result data can be written to the nonvolatile memory.

1. Connection

1) Connect the HASP key to the USB terminal of the PC.
2) Connect the PC and set with the USB cable.
3) Confirm that the set starts in the USB mode.
4) Start the SEUS on the PC.
5) Click Connect on the SEUS screen. If the connection is normal, the SEUS screen will be as shown in Fig. 6-1-7, indicating the “connected” state.

Note: The SEUS will go in “disconnect" state, if the set is turned off (for instance, by resetting the set). In such a case, click Connect on the SEUS screen to restore the “connected” state.

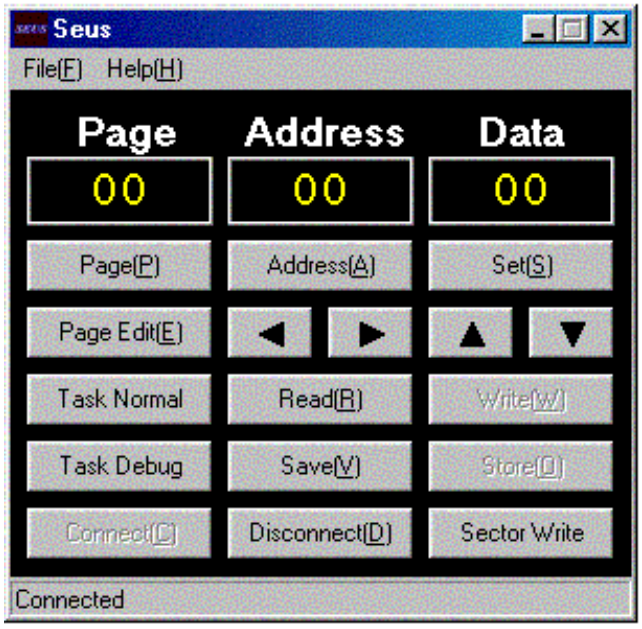


Fig. 6-1-7

2. Operation

- Page change
  To change the page, click Page on the SEUS screen and enter the page to be changed. The page is displayed in hexadecimal notation.

- Address change
  To change the address, click Address on the SEUS screen and enter the address to be changed. The address is displayed in hexadecimal notation.

- Data change
  To change the data, click Set on the SEUS screen and enter the data. The data is displayed in hexadecimal notation.
  This operation does not write the data to the nonvolatile memory.

- Data saving
  To write the all changed data to the nonvolatile memory, click Save on the SEUS screen and wait for more than 3 sec.

- Data reading
  The data displayed on the SEUS screen are the data values at the time when the pages and addresses were set, and they are not updated automatically. To check the data change, click Read on the SEUS screen and update the displayed data.

1-1-5. Precaution on Use of SEUS

Wrong SEUS operation could clear correct adjustment data. To prevent the data clear by mistake, it is recommended to save all adjustment data by clicking Page Edit on the SEUS screen before starting the adjustment.

Saving Method:

1) Click Page Edit on the SEUS screen to display the SEUS PAGE EDIT screen.
2) Click Page, and enter the page number to be saved.
3) Click Page to read the data to be saved from the camera.
4) Click File and save the data to PC.

Loading Method:

1) Select page: 00, address: 01 and set data: 01.
2) Click Page Edit on the SEUS screen to display the SEUS PAGE EDIT screen.
3) Click File and load the data from PC.
4) Click Write on the SEUS PAGE EDIT screen.
5) Click Close to close the SEUS PAGE EDIT screen.
6) Click Save on the SEUS screen.
7) Wait for more than 3 sec.
8) Select page: 80, address: 30, and check that the data is “00”.
9) Select page: 00, address: 01 and set data: 00.

1-2. AUTOMATIC ADJUSTMENT

The DSC-P73 is adjusted with the Automatic Adjustment Program. The Automatic Adjustment Program controls automatically the adjustment operations that conventionally were entered manually on the operation screen (however, partially some adjustments will require manual operation on the SEUS operation screen).

1-2-1. Precautions When Using Automatic Adjustment Program

1) The Automatic Adjustment Program writes the adjustment results such as EVR data to the set through two-way communication with the camera via the SEUS. Accordingly, the Automatic Adjustment Program must be used in the environment where the SEUS operates.
2) The program run time may vary depending on the environment of the personal computer used.
3) Even if the Automatic Adjustment Program is used without starting the SEUS, the SEUS will start automatically when the adjustment is executed. However, it may take time for the SEUS to start, and therefore the Automatic Adjustment Program should be used with the SEUS started in order to reduce the program run time.

1-2-2. Start of Automatic Adjustment Program

Double-click the application file (DSC-P73 Auto-Adj Ver_1.□r□□.exe), and the Automatic Adjustment Program will start.

Note: □ (numeric value) of the file name varies depending on the version of Automatic Adjustment Program.

1-2-3. Function of Each Button on Main Menu Screen

When the Automatic Adjustment Program started, the Main Menu screen in Fig. 6-1-8 will appear. On this screen, select each adjustment section.

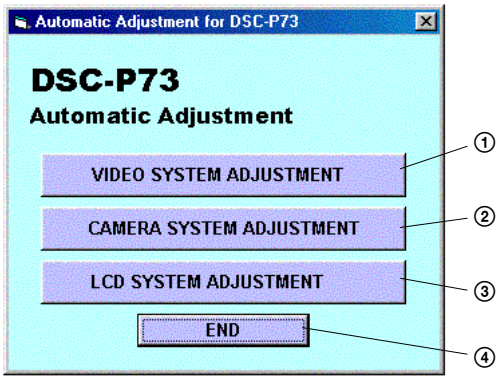


Fig. 6-1-8

① VIDEO SYSTEM ADJUSTMENT button
The “VIDEO SYSTEM ADJUSTMENT” screen appears.

② CAMERA SYSTEM ADJUSTMENT button
The “CAMERA SYSTEM ADJUSTMENT” screen appears.

③ LCD SYSTEM ADJUSTMENT button
The “LCD SYSTEM ADJUSTMENT” screen appears.

④ END button
The Automatic Adjustment Program finishes.

1-3. VIDEO SYSTEM ADJUSTMENTS

1-3-1. Function of Each Button on Video System Adjustment Screen

Click the VIDEO SYSTEM ADJUSTMENT button on the Main Menu screen, and the "VIDEO SYSTEM ADJUSTMENT" screen in Fig. 6-1-9 will appear.

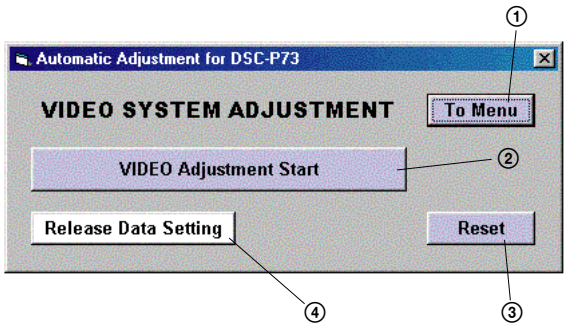


Fig. 6-1-9

① To Menu button
The Main Menu screen comes back.

② VIDEO Adjustment Start button
"Video Adjustment" starts.

③ Reset button
This button functions same as the Reset button of the camera.

④ Release Data Setting button
The data setting at the adjustment is cancelled.
During the data setting, the button color changes from "white" to "red". When the data setting is cancelled, the button color returns to "white".
(Use this button when an error occurred in the video adjustment. If the adjustment completed successfully, the data setting is automatically cancelled and the button color returns to "white".)

1-3-2. Adjustment Items of VIDEO System Adjustment

The adjustment items of video system adjustment are as listed in Table 6-1-2. The Automatic Adjustment Program executes the adjustment items if the VIDEO Adjustment Start button is clicked.

Button Name	Adjustment	Signal	Page	Address
VIDEO Adjustment	VIDEO Output Level Adj.	Arbitrary	8F	D0

Table 6-1-2

1-3-3. Adjusting Method

[Automatic Adjustment Program execution items and sequence]

1. Data Setting during Video Adj.
2. Video Output Level Adj.
3. Release of Data Setting during Video Adj.

[Specified value of video output level adj.]

Measurement Point	Video terminal of AV OUT jack (75 Ω terminated)
Measuring Instrument	Oscilloscope
Specified Value	Sync level: A = 286 ± 5 mV (NTSC mode) A = 300 ± 5 mV (PAL mode) Burst level: B = 286 ± 30 mV (NTSC mode) B = 300 ± 30 mV (PAL mode)

[Adjusting method]

1) Click the VIDEO Adjustment Start button.
2) The Automatic Adjustment Program executes the "1. Data Setting during Video Adj.".
3) If "1. Data Setting during Video Adj." completed successfully, the next message is displayed during the execution of "2. Video Output Level Adj.". Using the UP/DOWN key on the SEUS Operation screen, adjust so that the sync level of the video signals satisfies the specified value. After the adjustment, check that the burst level of the video signals satisfies the specified value, and click the OK button in the message.

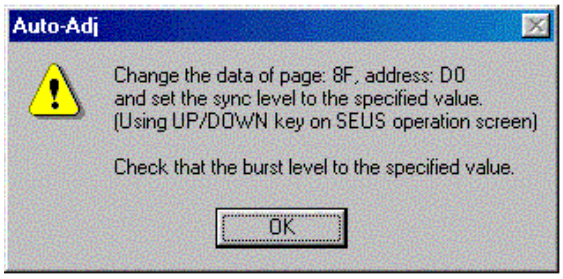

Auto-Adj
Change the data of page: 8F, address: D0
and set the sync level to the specified value.
(Using UP/DOWN key on SEUS operation screen)
Check that the burst level to the specified value.
OK

Fig. 6-1-10

4) If the OK button button is clicked, "3. Release of Data Setting during Video Adj." will be executed.
5) Upon successful completion of all items of the VIDEO adjustment, the following message is displayed. Click the OK button.

Fig. 6-1-11

SEUS operation screen

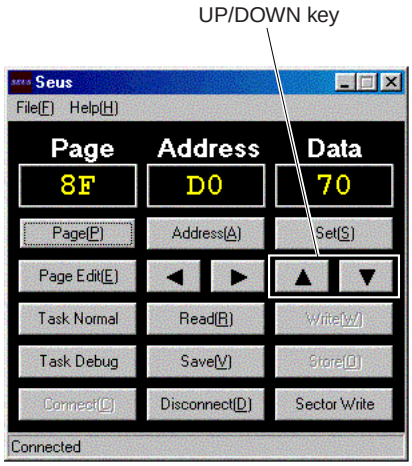


Fig. 6-1-12

Check on the oscilloscope

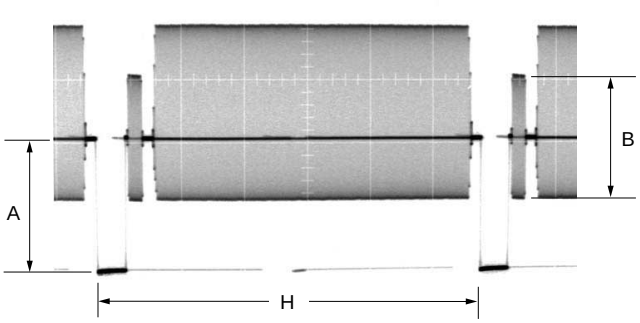


Fig. 6-1-13

1-4. CAMERA SYSTEM ADJUSTMENTS

1-4-1. Function of Each Button on Camera System Adjustment Screen

Click the CAMERA SYSTEM ADJUSTMENT button on the Main Menu screen, and the "CAMERA SYSTEM ADJUSTMENT" screen in Fig. 6-1-14 will appear.

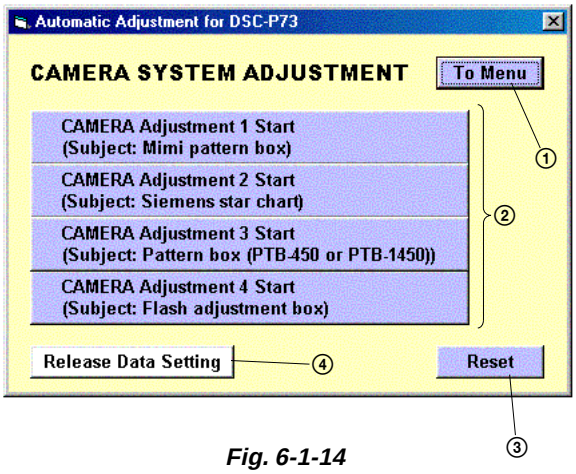


Fig. 6-1-14

① To Menu button
The Main Menu screen comes back.

② Adjustment start buttons
- CAMERA Adjustment 1 Start button
  "Camera Adjustment 1" starts.
- CAMERA Adjustment 2 Start button
  "Camera Adjustment 2" starts.
- CAMERA Adjustment 3 Start button
  "Camera Adjustment 3" starts.
- CAMERA Adjustment 4 Start button
  "Camera Adjustment 4" starts.

③ Reset button
This button functions same as the Reset button of the camera.

④ Release Data Setting button
The data setting at the adjustment is cancelled.
During the data setting, the button color changes from "white" to "red". When the data setting is cancelled, the button color returns to "white".
(Use this button when an error occurred in the camera adjustment 1-4. If the adjustment completed successfully, the data setting is automatically cancelled and the button color returns to "white".)

1-4-2. Adjustment Items of Camera System Adjustment

The adjustment items of camera system adjustment are as listed in Table 6-1-3. The Automatic Adjustment Program divides the adjustment items into four, camera adjustment 1-4. Clicking either CAMERA Adjustment Start button allows the adjustment item which corresponds to that button to be executed.
The adjustment conditions of the subject and filter vary depending on which item is adjusted. The Adjustment Program displays an instruction for the subject and filter as a message during the adjustment.

Button Name	Adjustment	Subject	Adjustment Page	Adjustment Address
CAMERA Adjustment 1	Flange Back Adj.	Siemens star chart with ND filter for minipattern box (Note)	6F	18 to 3E, 52, 53
CAMERA Adjustment 2	Flange Back Check	Siemens star chart with ND filter (1.0m from front the lens) (Luminance: 200 to 400 lux)		
CAMERA Adjustment 3	F No. Compensation	Clear chart (Standard picture frame)	6F	60 to 64, 6B to 6D
	Mechanical Shutter Adj.		6F	6B to 6D, B8 to D7
	Light Value Adj.		6F	65 to 67
	AWB 3200K Standard Data Input		6E	04 to 21, 42, 43
	AWB 5800K Standard Data Input	Clear chart (Standard picture frame) Filter C14 for color temperature correction	6E	00 to 03, 24 to 41, 44, 45
	AWB 5800K Check			
	AWB 3200K Check	Clear chart (Standard picture frame)		
	CCD Linearity Check			
	Color Reproduction Adj.	Color ber chart (Standard picture frame)	6E	60 to 67
	CCD White Defect Compensation Check	Clear chart (Standard picture frame)		
	CCD Black Defect Compensation Check			
CAMERA Adjustment 4	Strobe Adj.	Flash adjustment box	6E	72 to 75
			6F	D8 to EF
	Auto Focus Illumination Check		6F	10 to 15

Note: Dark Siemens star chart.

Table 6-1-3

1-4-3. Adjusting Method

1. CAMERA Adjustment 1

[Automatic Adjustment Program execution items and sequence]

1. Data Setting during Camera Adj.
2. Flange Back Adj.
3. Release of Data Setting during Camera Adj.

[Adjusting method]

1) Click the CAMERA Adjustment 1 Start button.
2) The Automatic Adjustment Program executes "1. Data Setting during Camera Adj.".
3) Upon successful completion of the "1. Data Setting during Camera Adj.", the following message is displayed. Set the subject by referring to "Preparation of Flange Back Adj.".

Fig. 6-1-15

4) If the OK button is clicked, "2. Flange Back Adj." and "3. Release of Data Setting during Camera Adj." will be executed.
5) Upon successful completion of all items of the CAMERA Adjustment 1, the following message is displayed. Click the OK button.

Fig. 6-1-16

Preparation of Flange Back Adj.

1) The minipattern box is installed as shown in the following figure.
   Note 1: The attachment lenses are not used.
   Note 2: Take care not to hit the mini-pattern box when extending the lens.
2) Install the minipattern box so that the distance between it and the front of lens of camera is less than 3 cm.
3) Make the height of minipattern box and the camera equal.
4) Check the output voltage of the regulated power supply is the specified voltage ± 0.01 Vdc.
5) Check that the center of Siemens star chart meets the center of shot image screen with the zoom lens at TELE end and WIDE end respectively.

Specified voltage: The specified voltage varies according to the minipattern box, so adjustment the power supply output voltage to the specified voltage written on the sheet which is supplied with the minipattern box.

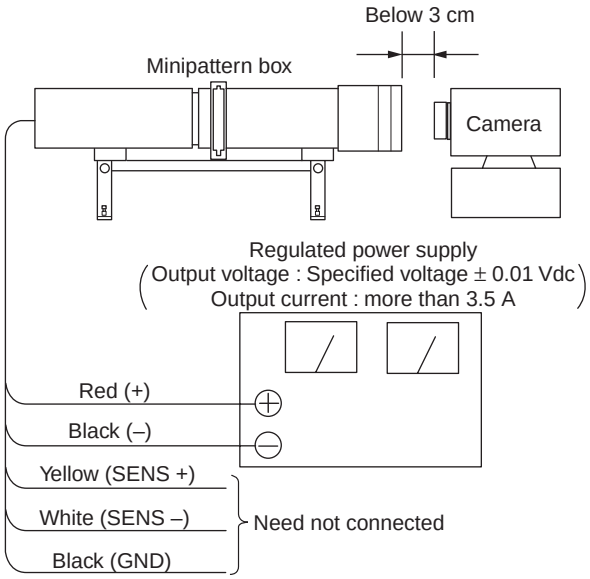


Fig. 6-1-17

2. CAMERA Adjustment 2

[Automatic Adjustment Program execution items and sequence]

1. Data Setting during Camera Adj.
2. Flange Back Check
3. Release of Data Setting during Camera Adj.

[Adjusting method]

1) Click the CAMERA Adjustment 2 Start button.
2) The Automatic Adjustment Program executes "1. Data Setting during Camera Adj.".
3) Upon successful completion of the "1. Data Setting during Camera Adj.", the following message is displayed. Set the subject in accordance with the message.

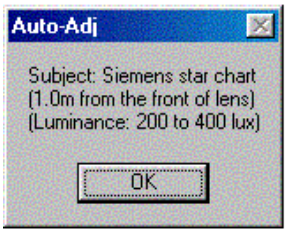


Fig. 6-1-18

4) Click the OK button is clicked, "2. Flange Back Check" is executed. The following messages are displayed, and then operate the cameral to make a check in accordance with the messages.

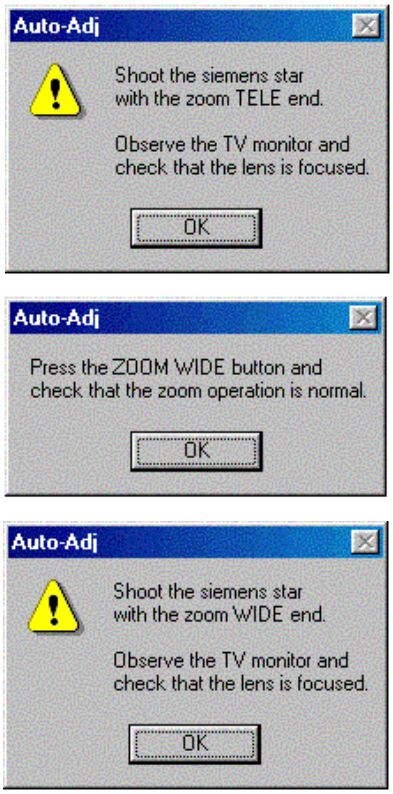


Fig. 6-1-19

5) Upon completion of "2. Flange Back Check", "3. Release of Data Setting during Camera Adj." is executed.

6) Upon successful completion of all items of the CAMERA Adjustment 2, the following message is displayed. Click the OK button.

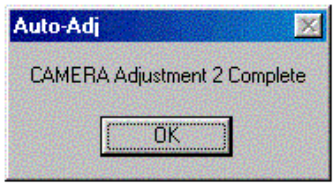


Fig. 6-1-20

3. CAMERA Adjustment 3

[Automatic Adjustment Program execution items and sequence]

1. Data Setting during Camera Adj.
2. Picture Frame Setting
3. F No. Compensation
4. Mechanical Shutter Adj.
5. Light Value Adj.
6. AWB 3200K Standard Data Input
7. AWB 5800K Standard Data Input
8. AWB 5800K Check
9. AWB 3200K Check
10. CCD Linearity Check
11. Color Reproduction Adj.
12. CCD White Defect Compensation Check
13. CCD Black Defect Compensation Check
14. Release of Data Setting during Camera Adj.

[Adjusting method]

1) Click the CAMERA Adjustment 3 Start button.
2) The Automatic Adjustment Program executes the "1. Data Setting during Camera Adj.".
3) Upon successful completion of "1. Data Setting during Camera Adj.", "2. Picture Frame Setting" is executed. The following message is displayed, and then referring to Fig. 6-1-23 to Fig. 6-1-25, set the subject and click the OK button.

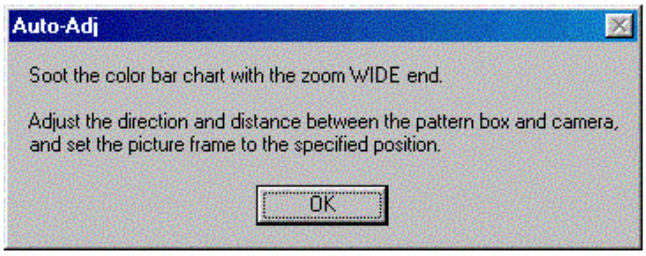

Auto-Adj
Soot the color bar chart with the zoom WIDE end.
Adjust the direction and distance between the pattern box and camera, and set the picture frame to the specified position.
OK

Fig. 6-1-21

After that, the next message is displayed. Then, change the chart in accordance with the message.

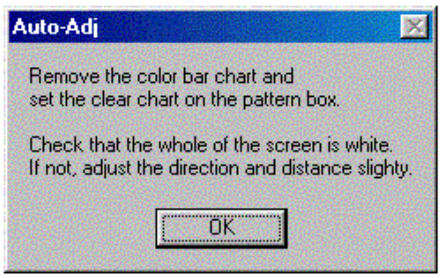

Auto-Adj
Remove the color bar chart and set the clear chart on the pattern box.
Check that the whole of the screen is white. If not, adjust the direction and distance slighty.
OK

Fig. 6-1-22

4) Click the OK button, and the items from "3. F No. Compensation" to "6. AWB 3200K Standard Data Input" will be executed.

Check on the oscilloscope

Measurement Point: Video terminal of A/V OUT jack (75Ω terminated)

1. Horizontal period

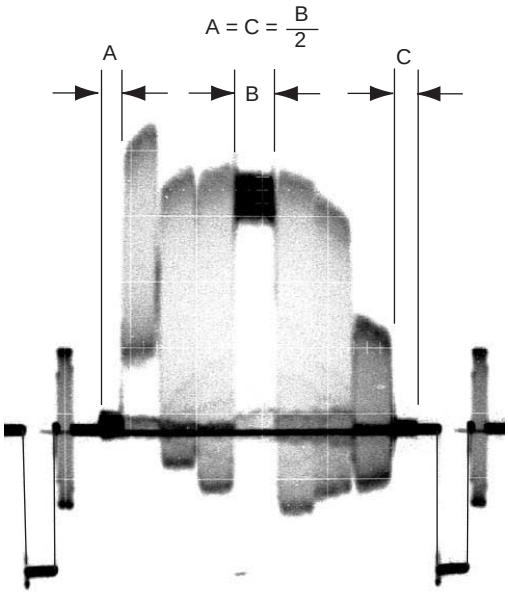


Fig. 6-1-23

2. Vertical period

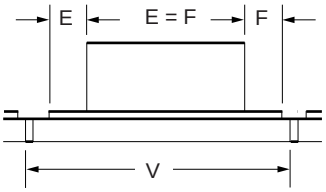


Fig. 6-1-24

Check on the monitor TV

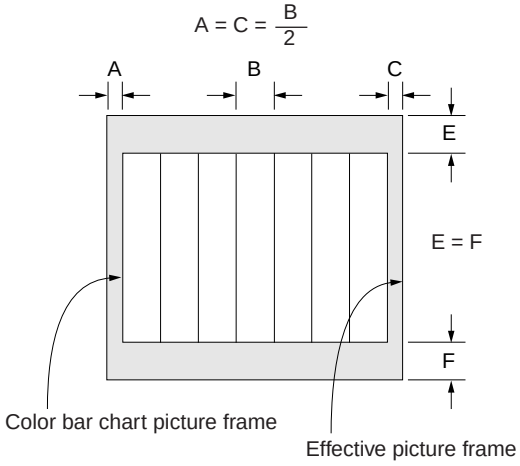


Fig. 6-1-25

5) Upon successful completion of the “AWB 3200K Check”, the following message is displayed. Set the filter in accordance with the message.

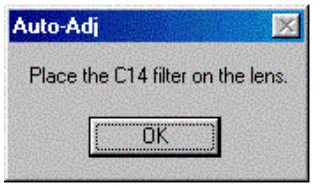


Fig. 6-1-26

6) Click the OK button, and the “7. AWB 5800K Standard Data Input” and “8. AWB 5800K Check” will be executed.
7) Upon successful completion of the “AWB 5800K Check”, the following message is displayed. Set the filter in accordance with the message.

Fig. 6-1-27

8) Click the OK button, and the “9. AWB 3200K Check” and “10. CCD Linearity Check” will be executed.
9) Upon successful completion of “10. CCD Linearity Check”, the following message is displayed. Change the chart in accordance with the message.

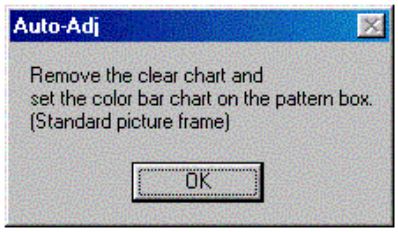


Fig. 6-1-28

10) Click the OK button, and “11. Color Reproduction Adj.” will be executed. The following messages are displayed in order, and then operate the vectorscope to make a check with the color reproduction frame in accordance with the message.

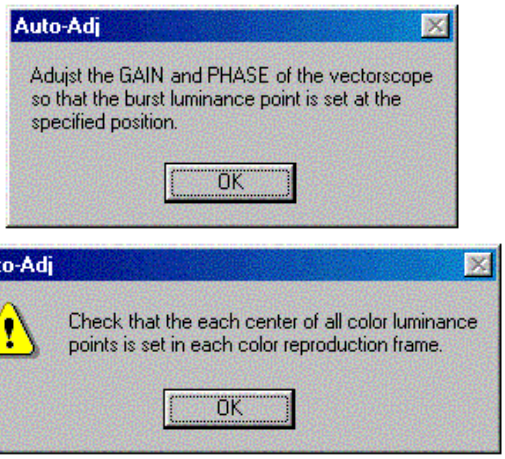

Auto-Adj
Adujst the GAIN and PHASE of the vectorscope
so that the burst luminance point is set at the
specified position.
OK
Auto-Adj
Check that the each center of all color luminance
points is set in each color reproduction frame.
OK

Fig. 6-1-29

11) Upon successful completion of “11. Color Reproduction Adj.”, the following message is displayed. Change the chart in accordance with the message.

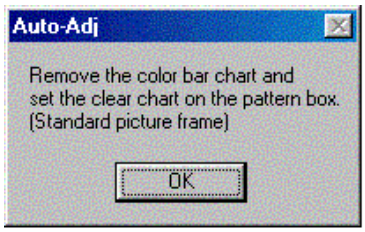


Fig. 6-1-30

12) Click the OK button, and the “12. CCD White Defect Compensation Check”, “13. CCD Black Defect Compensation Check” and “14. Release of Data Setting during Camera Adj.” will be executed.
13) Upon successful completion of all items of the CAMERA Adjustment 3, the following message is displayed. Click the OK button.

Fig. 6-1-31

Check on the vectorscope

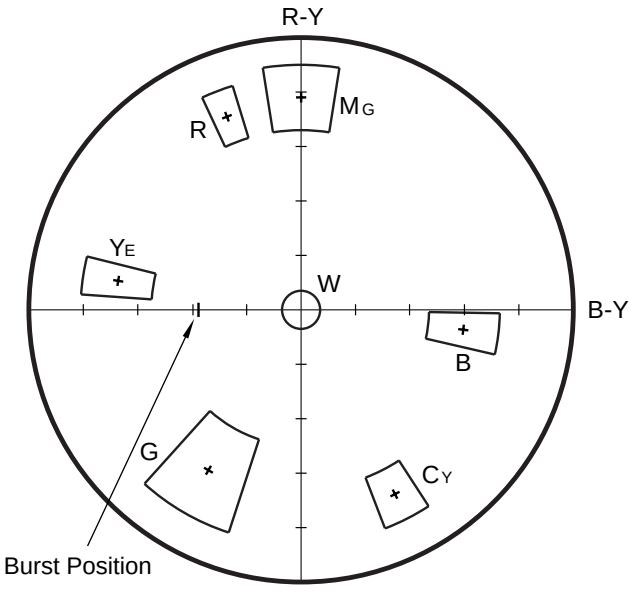


Fig. 6-1-32

4. CAMERA Adjustment 4

Note: "CAMERA Adjustment 4" is available only once after the power is turned on. If the adjustment is retried, turn off the power and turn on again.

[Automatic Adjustment Program execution items and sequence]

1. Data Setting during Camera Adj.
2. Strobe Adj.
3. Auto Focus Illumination Check
4. Release of Data Setting during Camera Adj.

[Adjusting method]

1) Click the CAMERA Adjustment 4 Start button.
2) The Automatic Adjustment Program executes the "1. Data Setting during Camera Adj.".
3) Upon successful completion of the "1. Data Setting during Camera Adj.", the following message is displayed. Set the subject in accordance with the message.
   (For the Flash adjustment box, refer to "3. Preparing the Flash Adjustment Box" (see page 6-6).)

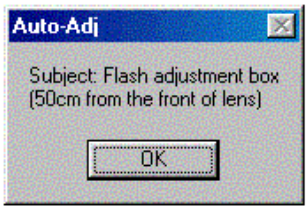


Fig. 6-1-33

4) Press the OK button, and the "2. Strobe Adj." will be executed.
5) During execution of "2. Strobe Adj.", the following message is displayed. After checking the flashing of strobe light, click the OK button. (This message is displayed 2 times during execution of adjustment.)

Fig. 6-1-34

6) Upon successful completion of "2. Strobe Adj.", "3. Auto Focus Illumination Check" is executed.
7) Upon successful completion of the "3. Auto Focus Illumination Check", the "4. Release of Data Setting during Camera Adj." will be executed successively.
8) Upon successful completion of all items of the CAMERA Adjustment 4, the following message is displayed. Click the OK button.

Fig. 6-1-35

1-5. LCD SYSTEM ADJUSTMENTS

1-5-1. Function of Each Button on LCD System Adjustment Screen

Click the LCD SYSTEM ADJUSTMENT button on the Main Menu screen, and the "LCD SYSTEM ADJUSTMENT" screen in Fig. 6-1-36 will appear.

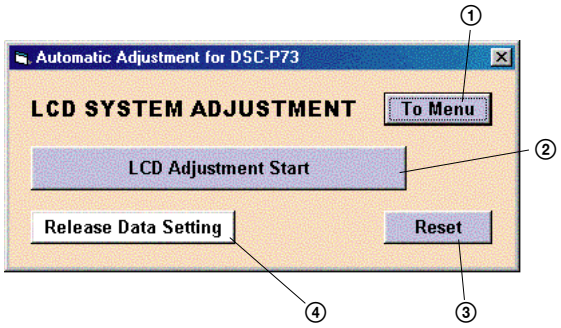


Fig. 6-1-36

① To Menu button
The Main Menu screen comes back.

② LCD Adjustment Start button
"LCD Adjustment" starts.

③ Reset button
This button functions same as the Reset button of the camera.

④ Release Data Setting button
The data setting at the adjustment is cancelled.
During the data setting, the button color changes from "white" to "red". When the data setting is cancelled, the button color returns to "white".
(Use this button when an error occurred in the LCD adjustment. If the adjustment completed successfully, the data setting is automatically cancelled and the button color returns to "white".)

1-5-2. Adjustment Items of LCD System Adjustment

The adjustment items of LCD system adjustment are as listed in Table 6-1-4. The Automatic Adjustment Program executes the adjustment items if the LCD Adjustment Start button is clicked.

Button Name	Adjustment	Signal	Page	Address
LCD Adjustment	LCD Initial Data Input	Arbitrary	8F	20 to 25, 27, 28, 2A, 2C, 34, 39
	VCO adj.		8F	23
	Contrast adj.		8F	2C
	V-COM adj.		8F	24
	White Balance adj.		8F	28, 2A

Table 6-1-4

1-5-3. Adjusting Method

[Automatic Adjustment Program execution items and sequence]

1. Data Setting during LCD Adj.
2. LCD Initial Data Input
3. VCO Adj.
4. Contrast Adj.
5. V-COM Adj.
6. White Balance Adj.
7. Release of Data Setting during LCD Adj.

[Adjusting method]

1) Click the LCD Adjustment Start button.
2) The Automatic Adjustment Program executes the items from "1. Data Setting during LCD Adj." to "4. Contrast Adj.".
3) Upon successful completion of the "4. Contrast Adj.", the following message is displayed during execution in "5. V-COM Adj.". On the SEUS screen, operate the UP/DOWN key so that the brightness of portions A and B on the LCD panel is equal. After the adjustment, click the OK button.

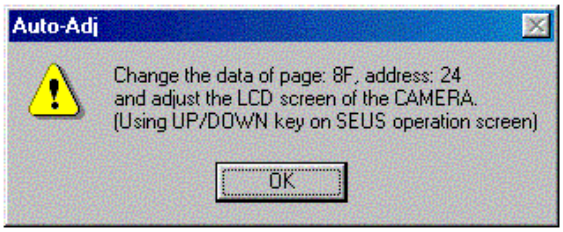

Auto-Adj
Change the data of page: 8F, address: 24
and adjust the LCD screen of the CAMERA.
(Using UP/DOWN key on SEUS operation screen)
OK

Fig. 6-1-37

4) Upon completion of "5. V-COM Adj.", "6. White Balance Adj." is executed. The following message is displayed, and then check that LCD screen is not colored.
If colored, change the data of page: 8F, address: 28 and 2A on the SEUS Operation screen to adjust so that the LCD screen is not colored.

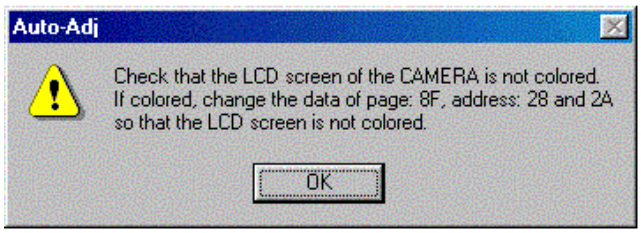

Auto-Adj
Check that the LCD screen of the CAMERA is not colored.
If colored, change the data of page: 8F, address: 28 and 2A
so that the LCD screen is not colored.
OK

Fig. 6-1-38

5) If the OK button is clicked, "7. Release of Data Setting during LCD Adj." will be executed.

Fig. 6-1-39

SEUS operation screen

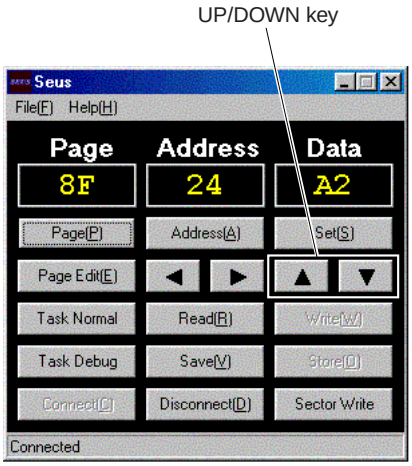


Fig. 6-1-40

Check on the LCD screen (V-COM Adj.)

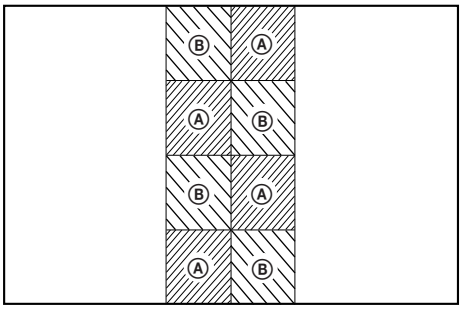


Fig. 6-1-41

1-6. ERROR

In case of an error during the execution of adjustment, the Automatic Adjustment Program interrupts the processing at that point, and displays an error message, and then terminates the program execution there.

1-6-1. Error Message

When an error message is displayed, perform the remedy given below, and then retry adjustment. If the error message is displayed though the remedy was performed, the circuits will be faulty.

1. Connect Error

Fig. 6-1-42

Symptom	USB communication with the set is abnormal.
Cause	• USB cable is not inserted tightly. • Power supply is not installed correctly. • Communication with SEUS is abnormal.
Remedy	• Disconnect the USB cable once, and then reconnect it tightly and check that the set is in "USB Mode". • Install the power supply correctly. • Start the SEUS and click the Connect to check that the connection state is established.

2. RESET the CAMERA and Try Again

Fig. 6-1-43

Symptom	The camera is not ready for adjustment.
Cause	• Data error exists in the camera.
Remedy	• Reset the camera.

3. Adjustment Time Out

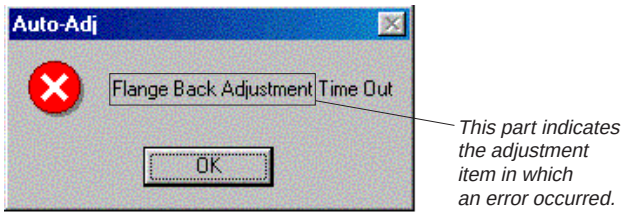


Fig. 6-1-44

Symptom	Adjustment does not finish within the specified time.
Cause	• Adjustment conditions are wrong. • Data error exists in the camera.
Remedy	• Check that the conditions such as a subject are correct. • Reset the camera.

4. Adjustment NG

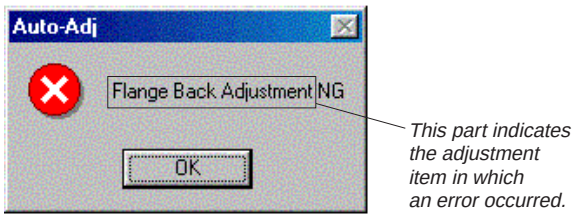


Fig. 6-1-45

Symptom	The adjusted data does not become the specified value.
Cause	• Adjustment conditions are wrong. • Data error exists in the camera.
Remedy	• Check that the conditions such as a subject are correct. • Reset the camera.

5. Data Save Error

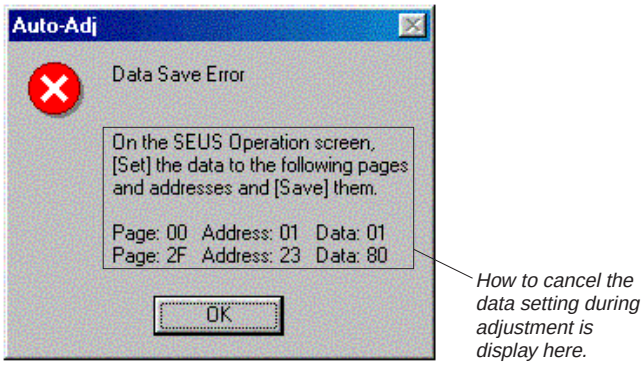

Auto-Adj
Data Save Error
On the SEUS Operation screen, [Set] the data to the following pages and addresses and [Save] them.
Page: 00 Address: 01 Data: 01
Page: 2F Address: 23 Data: 80
OK
How to cancel the data setting during adjustment is display here.

Fig. 6-1-46

Symptom	data cannot be saved normally. (The data setting during adjustment cannot be cancelled)
Cause	• Data writing to the flash memory failed. • Connection is faulty. • Power supply is not installed correctly.
Remedy	• On the SEUS Operation screen, Set the data to the pages and addresses displayed in the message, and Save them. (Cancel manually the data setting during adjustment.) • Check the connection. • Install the power supply correctly.

1-6-2. Precautions When an Error Occurred

The Automatic Adjustment Program sets the data for adjustment before the adjustment starts. Accordingly, if the adjustment terminates by an error, the data during the adjustment may be left in the camera.

Note 1: With this data left in the camera, the camera will not operate normally.

In this case, the Release Data Setting button is displayed in "red" on the screen as shown in Fig. 6-1-47, 48 and 49. Click the Release Data Setting button to cancel the data setting. When the data setting is cancelled, the button color becomes "white".

Note 2: When "Data Save Error" occurred, the Release Data Setting button is displayed in "white".
To cancel the data setting, perform it on the SEUS Operation screen. How to cancel the data setting is displayed in the error message.

Video System Adjustment screen

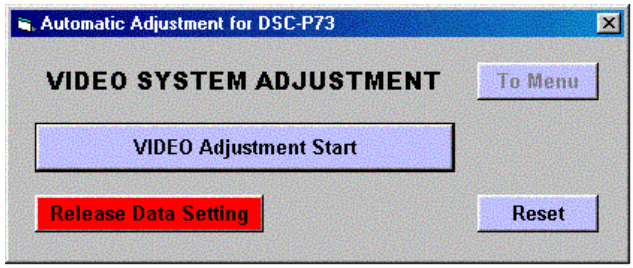


Fig. 6-1-47

Camera System Adjustment screen

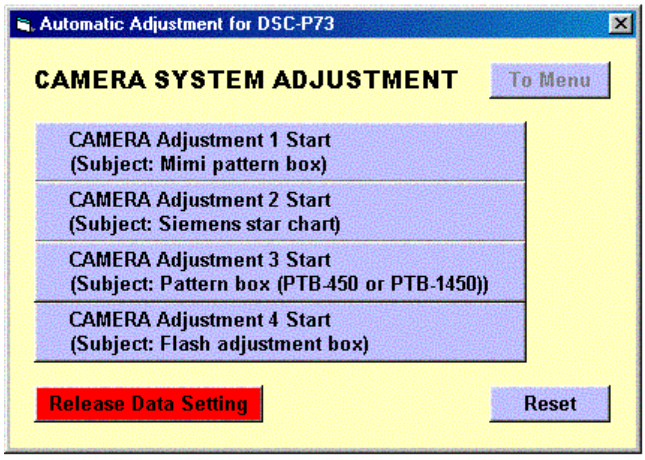


Fig. 6-1-48

LCD System Adjustment screen

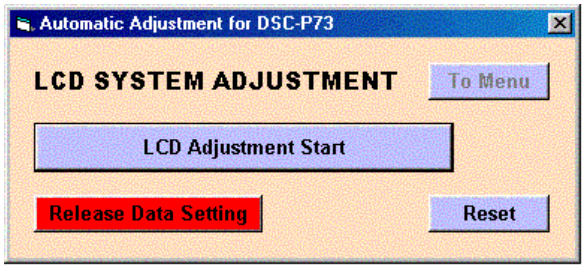


Fig. 6-1-49

1-7. INITIALIZATION OF DATA

1. Initializing All Page Data

By performing the following procedure, data of all pages will be initialized.

Note: If all page data have been initialized, all adjustments need to be performed again.

Initializing Method:

1) Select page: 00, address: 01 and set data: 01.
2) Click [Sector Write] on the SEUS screen to display the SEUS SECTOR WRITE screen.
3) Check that the SET ID is "06".
4) Click [All] of the ALL SELECT buttons to select all pages. (Fig. 6-1-50 Ⓐ)
5) Click [Write] to write the initializing data to the flash memory of the camera.
6) Wait for 3 sec.
7) Click [Close] to close the SEUS SECTOR WRITE screen.
8) Select page: 8E, address: 00 and set data: 20.
9) Click [Save] on the SEUS screen.
10) Wait for more than 3 sec.
11) Select page: 80, address: 30, and check that the data is "00".

Processing after Completing Initializing

Order	Page	Address	Data	Procedure
1	20	00	29 [Set]	
2	20	01	29 [Set]	(Note)

Note: At this time, the camera is reset and the power is turns off once and then on again. Accordingly, the message "Receive Packet Error" is displayed on the SEUS screen, and the SEUS goes in "disconnect" state, but this is not a trouble. Click [Connect] on the SEUS screen to restore the "connected" state. (In case that the power does not turn on again, press the power button.)

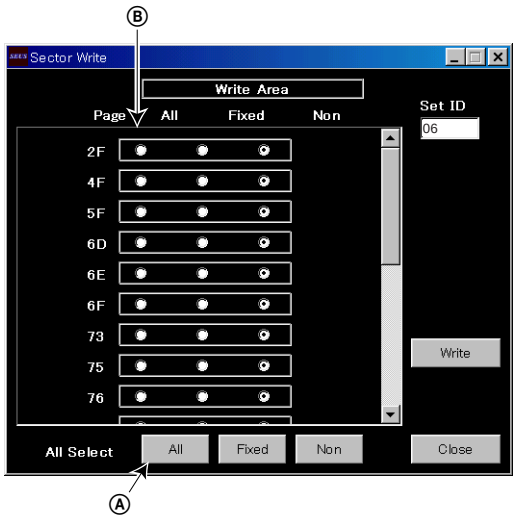


Fig. 6-1-50

2. Initializing Single Page Data

By performing the following procedure, data of the page that you want to initialize will be initialized.

Note 1: If the 6E or 6F page data have been initialized, the following adjustment needs to be performed again.
1) Camera system adjustments

Note 2: If the 8F page data have been initialized, the following adjustment needs to be performed again.
1) Video system adjustments
2) LCD system adjustments

Initializing Method:

1) Select page: 00, address: 01 and set data: 01.
2) Click [Sector Write] on the SEUS screen to display the SEUS SECTOR WRITE screen.
3) Check that the SET ID is "06".
4) Click "All" of the option buttons of target page. (Fig. 6-1-50 Ⓑ)
5) Click [Write] to write the initializing data to the flash memory of the camera.
6) Wait for 3 sec.
7) Click [Close] to close the SEUS SECTOR WRITE screen.
8) When 8E page is initialized, select page: 8E, address: 00 and set data: 20.
9) Click [Save] on the SEUS screen.
10) Wait for more than 3 sec.
11) Select page: 80, address: 30, and check that the data is "00".

Processing after Completing Initializing

Order	Page	Address	Data	Procedure
1	20	00	29 [Set]	
2	20	01	29 [Set]	(Note)

Note: At this time, the camera is reset and the power is turns off once and then on again. Accordingly, the message "Receive Packet Error" is displayed on the SEUS screen, and the SEUS goes in "disconnect" state, but this is not a trouble. Click [Connect] on the SEUS screen to restore the "connected" state. (In case that the power does not turn on again, press the power button.)

6-2. SERVICE MODE

1. Setting the Test Mode

Page 2F	Address 23

Data	Function
80	Normal
00	Forced SET UP mode
01	Forced MOVIE mode
02	Forced PLAY mode
03	Forced CAMERA (Auto) mode
04	Forced CAMERA (Program Auto) mode
05	Forced CAMERA (Manual) mode

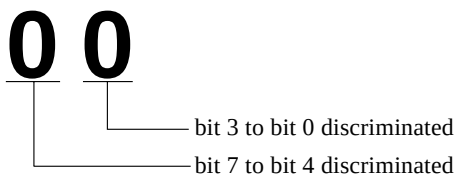
- Before setting the data, select page: 00, address: 01, and set data: 01.
- For page: 2F, the data set is recorded in non-volatile memory by saving data. In this case, the Test mode is not released even if the camera is turned off, thus requiring extreme care.
- After completing adjustments/repairs, release the data setting.

1) Select page: 00, address: 01, and set data: 01.
2) Select page: 2F, address: 23, and set data: 80.
3) Save the data.
4) Wait for more than 3 sec.
5) Select page: 80, address: 30, and check that the data is “00”.
6) Select page: 00, address: 01, and set data: 00.

2. Bit Value Discrimination

In the following items, the bit values must be discriminated from the data displayed on the SEUS. Whether bit values are “1” or “0” can be discriminated from the table shown below.

Data displayed on SEUS



	Display on the SEUS	Bit values bit3 or bit7	bit2 or bit6	bit1 or bit5	bit0 or bit4
	0	0	0	0	0
	1	0	0	0	1
	2	0	0	1	0
	3	0	0	1	1
	4	0	1	0	0
	5	0	1	0	1
	6	0	1	1	0
	7	0	1	1	1
Ⓐ	8	1	0	0	0
	9	1	0	0	1
	A	1	0	1	0
	B	1	0	1	1
	C	1	1	0	0
	D	1	1	0	1
Ⓑ	E	1	1	1	0
	F	1	1	1	1

Example: If the displayed data is “8E”, bit 7 - bit 4 values can be discriminated from block (A), and also bit 3 - bit 0 values from block (B).

3. LED Check

Page 20	Address 04
Page 80	Address 12
Page 8E	Address FE

Using method:

1) Select page: 00, address: 01, and set data: 01.
2) Select page: 20, address: 04, and set data: 02.
3) Select page: 8E, address: FE, and set data: 20.
4) Select page: 80, address: 12, and set data: 01.
5) Check that all LED are lit.
   - SELF TIMER/AF ILLUMINATOR
   - SELF TIMER/RECORRDING
   - AE/AF LOCK
   - FLASH CHARGE
   - MS ACCESS
6) Select page: 80, address: 12, and set data: 00.
7) Select page: 20, address: 04, and set data: 00.
8) Select page: 8E, address: FE, and set data: 00.
9) Select page: 00, address: 01, and set data: 00.
10) Click Disconnect on the SEUS screen.
11) Disconnect the USB cable.
12) Turn off the power.

4. Switch Check (1)

Page 80	Address 13

Function	When data = 00	When data = 01	When data = 02
Shutter button (XAE LOCK SW) (CONTROL SWITCH BLOCK S003)	OFF	ON	ON
Shutter button (XSHTR ON SW) (CONTROL SWITCH BLOCK S003)	OFF	OFF	ON

Using method:

1) Select page: 80, address: 13.
2) By discriminating the read data, the state of the switches can be discriminated.

5. Switch Check (2)

Page 20	Addresses 90 to 92

Using method:
1) Select page: 20, addresses: 90 to 92.
2) By discriminating the read data, the pressed key can be discriminated.

Address	Data					
	00 to 0C	0D to 28	29 to 4A	4B to 77		FF
90 (KEY AD0) (IC401Ⓙ6)	CONTROL DOWN (SW-419 board) (S255)	CONTROL UP (SW-419 board) (S251)	MENU (SW-419 board) (S258)	IMAGE SIZE/ DELETE (SW-419 board) (S260)		No key input
91 (KEY AD1) (IC401Ⓗ6)	CONTROL RIGHT (SW-419 board) (S256)	CONTROL LEFT (SW-419 board) (S252)	CONTROL SET (SW-419 board) (S254)	LCD STATUS/ LCD ON/OFF (SW-419 board) (S259)		No key input
92 (KEY AD2) (IC401Ⓖ6)	ZOOM W (SW-419 board) (S253)	ZOOM T (SW-419 board) (S257)				No key input

6. Mode Dial Check

Page 20	Addresses 95, 96

Using method:
1) Select page: 20, addresses: 95 and 96.
2) By discriminating the read data, the state of the mode dial can be discriminated.

Address	Data						
	00 to 0C	0D to 28	29 to 4A	4B to 77	78 to 9B	9C to E4	FF
95 (MODE DIAL0) (IC401Ⓙ8)	SET UP (Control switch block)	MOVIE (Control switch block)	PLAY (Control switch block)	AUTO (Control switch block)	P (Program Auto) (Control switch block)	M (manual) (Control switch block)	Others
96 (MODE DIAL1) (IC401Ⓙ9)	Twilight (Control switch block)	Twilight portrait (Control switch block)	Candle (Control switch block)	Landscape (Control switch block)	Beach (Control switch block)	Soft snap (Control switch block)	Others

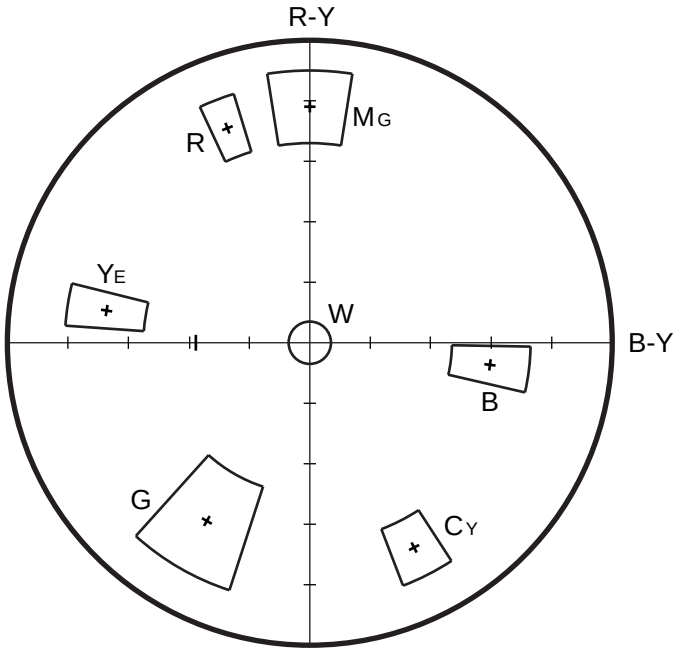
7. Self Diagnosis Code

Display Code	Countermeasure	Cause	Caution Display During Error
C:32:□□	Turn the power off and on again.	Trouble with hardware.	SYSTEM ERROR
C:13:□□	Format the “Memory stick”.	Unformatted memory stick is inserted.	FORMAT ERROR
	Insert a new “Memory Stick”.	Memory stick is broken.	MEMORY STICK ERROR
E:61:□□	Checking of lens drive circuit.	When failed in the focus and zoom initialization.	—
E:91:□□	Checking of flash unit or replacement of flash unit.	Abnormality when flash is being charged.	
E:92:□□	Insert a batteries correctly.	Batteries are pack is not inserted correctly.	
	Turn the power off and on again.	Batteries were installed or removed when using the AC adaptor.	

FOR CAMERA COLOR REPRODUCTION ADJUSTMENT

Take a copy of CAMERA COLOR REPRODUCTION FRAME with a clear sheet for use.

For NTSC mode



DSC-P73

Revision History

Ver.	Date	History	Contents	S.M. Rev. issued
1.0	2004.04	Official Release	—	—
1.1	2004.05	Correction-1 (C1)	• Correction of the data save method S. M. correction: Page 6-7, Page 6-22, Page 6-23	Yes